Montana Department of Natural Resources and Conservation

Forested Trust Lands Habitat Conservation Plan: Wildlife Methodologies

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DOCUMENT 1: VEGETATION CROSSWALK FOR GAP AND MONTANA STATE FOREST LAND MANAGEMENT PLAN VEGETATION DATA

GAP#	DESCRIPTION	SFLMP TYPE
1100	Urban or Developed Lands	None, code as Other
2010	Agricultural Lands - Dry	None, code as Other
2020	Agricultural Lands - Irrigated	None, code as Other
3110	Altered Herbaceous	Grassland
3130	Very Low Cover Grasslands	Grassland
3150	Low / Moderate Cover Grasslands	Grassland
3170	Moderate / High Cover Grasslands (associated with wet areas)	Riparian (includes riverine, lacustrine, and palustrine)
3180	Montane Parklands & Subalpine Meadows	Alpine
3200	Mixed Mesic Shrubs	Shrubland
3300	Mixed Xeric Shrubs	Shrubland
3309	Silver Sage	Shrubland
3310	Salt-Desert Shrub / Dry Salt Flats	Shrubland
3350	Sagebrush	Shrubland
3510	Mesic Shrub - Grassland Associations	Savannah
3520	Xeric Shrub - Grassland Associations	Savannah
4000	Low Density Xeric Forest	Savannah
4140	Mixed Broadleaf Forest	Woodland
4203	Lodgepole Pine	Forest
4205	Limber Pine	Woodland
4206	Ponderosa Pine	Forest
4207	Grand Fir	Forest
4210	Western Red Cedar	Forest
4211	Western Hemlock	Forest

GAP#	DESCRIPTION	SFLMP TYPE
4212	Douglas-fir	Forest
4214	Rocky Mountain Juniper	Woodland
4215	Western Larch	Forest
4216	Utah Juniper	Woodland
4223	Douglas-fir / Lodgepole Pine	Forest
4260	Mixed Whitebark Pine Forest	Forest
4270	Mixed Subalpine Forest	Forest
4280	Mixed Mesic Forest	Forest
4290	Mixed Xeric Forest	Forest
4300	Mixed Broadleaf & Conifer Forest	Woodland
4400	Standing Burnt Forest	Forest
5000	Water	Riparian (includes riverine, lacustrine, and palustrine)
6110	Conifer Riparian	Forest
6120	Broadleaf Riparian	Woodland
6130	Mixed Broadleaf & Conifer Riparian	Woodland
6200	Graminoid & Forb Riparian	Riparian (includes riverine, lacustrine, and palustrine)
6300	Shrub Riparian	Riparian (includes riverine, lacustrine, and palustrine)
6400	Mixed Riparian	Riparian (includes riverine, lacustrine, and palustrine)
7300	Rock (high elevation)	Alpine
7500	Mines, Quarries, Gravel Pits	None, code as Other
7600	Badlands	None, code as Other
7604	Missouri Breaks	None, code as Other
7800	Mixed Barren Sites	None, code as Other
8100	Alpine Meadows	Alpine
9100	Snowfields or Ice	Alpine
9800	Clouds	None, code as Other
9900	Cloud Shadows	None, code as Other

DOCUMENT 2. SWAN AGREEMENT GRIZZLY BEAR COVER CRITERIA USING SLI DATA

Prepared by Ross Baty, DNRC Forest Management Bureau, Wildlife Biologist; Brian Long, DNRC Forest Inventory Section Supervisor; and John Hogland, DNRC GIS Analyst, September 7, 2006

Introduction

These criteria were developed to periodically estimate the amount of grizzly bear cover in the Swan River State Forest consistent with the "Cover" definition contained in the Swan Valley Grizzly Bear Conservation Agreement (Swan Agreement). The criteria were also designed to be generally applicable for estimating grizzly bear hiding cover across western Montana. Stands that meet the criteria described below were considered to have a high probability of hiding 90% of a grizzly bear at 200 feet distance or less. Field experience and substantial familiarity with DNRC Stand Level Inventory classifications and procedures provided the basis for assumptions regarding which stands were likely to consistently maintain ≤200 foot sight distances. Stand structure, tree density and habitat types were primary considerations in developing attribute combinations assumed to provide cover. Further validation of these assumptions as budgets and workload allow is recommended.

DNRC--SLI Stand Criteria Used to Estimate Cover

If Stand Size Class (SSC) code = 7 (Seedling/Sapling Stands):

> Use Form B or Form B2 data. Cover = average tree height ≥4.5 feet & ≥350 trees per acre (TPA). This will require the filter to use the AVGDBH and TOTTPA fields. If a stand has an AVGDBH >0 the average tree must be at least 4.5 feet tall.
>
> If Form B or B2 data is not available: Cover = Stocking (STKING) codes M or W and SAMDATE year is ≤1996 (assuming seedling growth of 1 foot per year).

The hiding cover model makes an assumption about tree height growth in the case where Form B and Form B2 data is not available. Since some SSC=7 stands are not ≥4.5 feet tall we delay calling any of the stands hiding cover until the data is at least 4 years old. After four years have past, all stands are assumed to be at least 4.5 feet tall if the seedlings have averaged slightly more than one foot of height growth per year, and they were at least ^{2} to3 inches tall when originally inventoried. A seedling must normally be ^{2} to 3 inches tall to be considered "established," which is a requirement of the inventory process.

> *Rationale*: Using Form B or B2 data, stands considered as having minimally acceptable cover levels were those with ≥350 TPA with trees ≥4.5 ft. tall at time of inventory (≥ year1997). Stands with these characteristics were considered to have a high likelihood of maintaining average sight distances ≤200 feet (~350 trees per acre evenly distributed equates to a stand spacing of about 11 ft.x 11 ft.).
>
> For older data collected prior to 1997 (non-Form B data), the lowest classification allowed ("M" for moderate stocking) represents a range of at least ^{2}50, ~4-in. dbh TPA. To be considered cover, seedlings with dbh of 0.1 to 0.99 inches dbh must have 1,000 to 1,999 trees per acre. Saplings with 1.0 to 2.99 inches dbh must have 500 to 1,499 trees per acre.

Saplings with 3.0 to 4.99 inches dbh must have 250 to 999 trees per acre. We are willing to allow only 250 trees per acre in the 3.0 to 4.99 sapling group because in nearly all stands with this density the crowns will be relatively wide and extend nearly to the ground. Well-stocked stands (denoted "W") are assumed to exceed this minimum level. As a note for comparison, approximately 225 TPA is a common target density for stands following pre-commercial thinning treatments.

The inventory procedures use a different set of criteria to describe stocking for stands dominated by trees ≥5.0 inches dbh. Stand stocking is described by the amount of tree crown density. Crown density is the amount of the ground shaded by tree canopy recorded in percent. Forty percent crown density means if the sun were directly overhead there would be 40% of the ground in the shade. It is determined by photo-interpretation supplemented with observations on the ground. If a tree is located below another tree's crown the smaller tree crown does not contribute to the stand's crown density estimate.

The crown density codes and definitions are:

Code	Crown Density
P	10 – 39%
L	40 – 54%
M	usually 40 – 69%, 55 – 69% if combined with an L code
W	70%+

If SSC code = 8 (Poletimber, dbh ranges from 5.0 to 8.99 inches):

Cover = STKING codes L, M or W (found in first column of STKING field)

Rationale: Minimum stand density for this category is an L (for "Low"), which indicates that a stand at time of inventory possessed a live crown density of ≥40% of pole-sized trees. This density would normally equate to at least 350 stems per acre. All other pole stands labeled "M" and "W" were assumed to meet or exceed this minimum level of cover necessary to provide ample visual screening.

If SSC code = 9 (Sawtimber, dbh ≥9.0 inches -- *for these stands, two-part codes are used to describe crown density. The left hand column describes the total crown density for trees of all sizes, and the right hand column describes only the sawtimber crown density*):

Cover = STKING codes WP, ML, WL, WM, WW

Rationale: Stands labeled as "ML" were considered to have minimally acceptable stand density for providing adequate visual screening cover. Stands labeled in this way are required to possess a minimum of 40% sawtimber crown density and maintain 55-69% total combined crown density. Under this classification 15-29% of the total crown density would be represented in the non-sawtimber canopy component. All other stands with stocking codes WP, WL, WM, and WW were assumed to exceed the minimum level of screening cover typically contained in stands labeled as "ML."

Cover = STKING codes LP, MP, LL or MM & the stand must have one of the following habitat type codes – $^{2}6^{1,\,2}62$, 421, 533, 550, 625, 670 or 832. Habitat Types represented by these codes normally contain high levels of dense shrubs >3 feet tall.

Rationale: Stands with the LP and LL designation possess the lowest levels of coniferous visual screening cover. For a stand to be labeled "LP," it must possess a minimum of 40% crown density for all trees and a minimum of 10% crown density for sawtimber trees. Stands labeled as LP crown density will have a range of non-sawtimber crown density of 1-44% and sawtimber crown density of 10-39% with a total crown density that does not exceed 54%. Stands labeled as "LL" are estimated to have at least 40% sawtimber crown closure, and nonsawtimber crown closure that could range from 0-14%. Total crown density does not exceed 54%. Overall, all stands labeled as LP, MP, LL or MM were considered borderline for providing adequate visual screening cover when only considering conifer density and stand structure. Some stands were included as cover that were labeled with these codes, however, these were also required to fall within Habitat Types (Pfister et al. 1977) that normally possess a high abundance of dense shrubs. Habitat Types were only considered if they commonly contain shrub species typically growing >3 ft. tall. Select habitat types had to contain one or more large shrub species. Each shrub species was required to have a sample plot frequency $\geq$50% and average percent canopy coverage $\geq {}^{2}0\%$ (following Pfister et al. 1977:153-159). Shrub species considered in this assessment were: alsi, amal, hodi, mefe, opho, phma, prvi, rila, shca and tabr.

Mapping Procedures

The stand criteria described above was used to identify stands included in a Grizzly Bear Cover Base Map. This map depicts all stands considered "cover," which were assumed to have a high probability of maintaining average sight distances of $\leq$200 ft. The definition of "Cover" contained in the Swan Agreement states that... "vegetation blocks [must have] a minimum diameter of at least three Sight Distances, which on Plum Creek and [DNRC] lands shall not be less than 300 feet." For this model one sight distance of $\leq$200 was selected to be consistent with other previously-accepted hiding cover definitions for elk, which are similar-sized, wide-ranging species also sensitive to human disturbance (Thomas et al. 1979, Leege 1984, Lyon and Christensen 1992). To remain consistent with the Swan Agreement definition of Cover, all identified Cover patches were required to have a minimum width of $\geq$600 feet (ie., at least 3 sight distances of 200 ft.). To accomplish this task, the cover base map was buffered 300 ft. *into* cover, and then buffered 300 ft. *out from* cover using GIS to identify habitat fragments and slivers <600 ft. wide. The fragments and slivers were then removed from the base map to create the completed Cover map containing no cover patches <600 ft. in diameter or width. Percent Cover by BMU Subunit was then calculated.

References

Leege, T.A. 1984. Guidelines for evaluating and managing summer elk habitat in northern Idaho. Wildl. Bull. no. 11. ID Dept. Fish and Game. 38 pp.

Lyon, L.J, and A.G. Christensen. 1992. A partial glossry of elk management terms. USDA For. Serv. Intermtn. Res. Sta. Gen. Tech. Rep. INT-288. 6 pp.

Pfister, R.D., B.L. Kovalchik, S.F. Arno, and R.C. Presby. 1977. Forest habitat types of Montana. U.S. For. Serv. Gen. Tech. Rep. INT-34. 174 pp.

Thomas, J.W., H. Black, R. J. Scherzinger, R.J. Pedersen. 1979. Deer and elk. In: Wildlife habitats in managed forests: the Blue Mountains of Oregon and Washington. Agric. Hndbk. 553. Wash. D.C. USDA Forest Service: 104-127

DOCUMENT 3. MOTORIZED ROAD DENSITY ANALYSIS

Prepared by Ross Baty, DNRC Forest Management Bureau, Wildlife Biologist; and John Hogland, DNRC GIS Analyst, November 16, 2006

Motorized road density (MRD) is a metric used as a surrogate for the amount of human activity within a give area. There are numerous techniques that could be used to calculate MRD ranging form determining the total linear miles of road within a given area to estimating the miles of road within a window around a given area. The later technique typically provides a finer level of information than the former, which is conducive to surface modeling. While this technique is well accepted and used in grizzly bear management, there are potentially a number of ways in which the metric can be calculated. For the sake of conformity with the USFS the DNRC has adopted the Ake, 1994 methodology and has developed a GIS program to perform the analysis. Below highlights some of the finer details of the Ake methodology:

- **Road classes**
  - Open - All roads that are opened to motorized access through any part of the year excluding county roads, highways, and private roads for non IGBC
    - These roads include restricted roads unless the roads have permanent features which physically restrict access by non authorized persons
  - Restricted roads - Roads that have features that physically restrict the access of non authorized persons
  - Total - Open roads and restricted roads
  - Roads used for determining security core area
    - Total roads, highways, non IGBC private roads, and county roads
- **Converting vector lines to raster**
  - Applies a thinning algorithm
  - Applies a regression algorithm to increase the number of cells being identified as road cells
- **Floating window**
  - Area ~ 1 square mile
  - Square in shape
  - Assumes that 54*54, 30 m pixels = 1 square mile
  - Cell counts meeting a give threshold get classified as predefined category
- **Converting raster to polygon**
  - Polygon boundaries are not generalized
- **Areas within a given class for a given polygon are calculated using the converted raster.**

References:

Ake, K. 1994. Protocol paper: Moving window motorized access density analysis and security core area analysis for grizzly bear. Unpublished memo, edited 2/22/1995. Flathead National Forest, Kalispell, Montana.

DOCUMENT 4. LINKAGE PROCEDURAL DOCUMENT

Prepared by Ross Baty, DNRC Forest Management Bureau, Wildlife Biologist; and John Hogland, DNRC GIS Analyst, November 16, 2006

Overview

Servheen et al. (2003) identified many linkage zones for the northwest portion of Montana, however, the majority of the HCP Planning Area is outside the extent of that study. Therefore, to identify linkage zones for areas outside the extent of the Servheen study, we adopted the scoring methodologies of Servheen et al. (2003) and developed an objective approach based on a number of assumptions to identify additional potential areas important for wildlife linkage.

Procedure

The primary inputs to identifying the Linkage Zone Prediction (LZP) model scores of Servheen et al. (2003) are: road densities, developed sites, cover conditions, and riparian areas. Aggregating the initial linkage scores, Servheen et al. then groups the scores into three classes; "minimal", "low", and "moderate or high" combined impact categories. Using these aggregated scores (Final LZP model score pg 22) Servheen et al. manually delineated linkage zones along major vehicle transportation ways using the following basic principle; areas with a "minimal" or "low" impact score that are between large continuous blocks of habitat are considered linkage zones

Following Servheen et al. (2003) methodology, DNRC developed a GIS based model that identifies final LZP model scores using readily available data layers that have published estimates of accuracy. Overlaying the final LZP model scores with a major vehicle transportation layer, and performing a series of spatial analysis we identified linkage zones for portions of the HCP Planning Area that are outside the extent of the Servheen et al. study and SVGBCA area. One should note that data used for consideration of human development sites in this model was relatively old (1990), which is likely to cause an overestimation of potential linkage areas available at the scale of the Planning Area to an unknown degree. Considerable additional human development is likely to have occurred in some areas since the date the information was published. For reporting purposes, DNRC lands identified by Servheen et al. (2003), those identified in the SVGBCA, and additional lands identified using this revised DNRC modeling process were considered equally and were included in the HCP EIS analysis.

Model Assumptions and Methods

- **<u>Final linkage scores</u>**
  - Road densities
    - Total motorized access routes (TMAR)
      - Uses IGBC 1994 methodology for identifying total roads
        - all open roads, restricted roads and motorized trails
        - excludes county roads and HWY
      - Used DNRC road layer

- ♦ 1 sq mile moving window analysis using a circular window (31 30 m cells)
- Secure core areas (SCA)
  - ♦ Uses IGBC 1994 methodology for identifying roads
    - All existing roads
  - ♦ Used DNRC road layer
  - ♦ All areas outside 500 m buffer of roads is SCA

– Developed sites
- USGS cartographic places layer (1990)
  - ♦ Subset based on human activity
- USGS National Land Cover Dataset (1992)
  - ♦ Subset based on NLCD classes Low Intensity Residential High Intensity Residential
- Buffered all developed sites by 210 meters
- Development edge is between 210 and 240 meters

– Grizzly bear hiding cover
- USGS percent forest cover (2000)
  - ♦ Subset areas greater than 40% (40% cover was selected as a reasonable and minimum level of forest vegetation suitable for promoting movements of medium to large free-ranging wildlife species.)

– Final LZP model scores
- Defined by Servheen et al. 2003
  - ♦ 3 classes "minimal", "low", and "moderate or high"

– Linkage zones
- Overlay major highways and county roads (MHCR) on final LZP model scores
- Roads that bisect linkage zones that have a minimal or low LZP score (road links) and that have a linear lengths greater than or equal to 1 mile and less than or equal to 20 miles.
- Buffer road links by 3 miles (This distance is assumed to be a reasonable distance for a wildlife linkage approach zone for medium to large free-ranging wildlife species. Beyond this distance choices that direct movements of animals are likely to become more greatly influenced by other environmental factors. (R. Baty, Pers. Comm).Remove dense developed areas
  - ♦ Areas with "moderate or high" class type greater than 80% of a circle with a diameter of 1 mile (27 30 meter cells)
- Remove linkage zones that are split due to high development areas
  - ♦ Linkage zones must be contiguous and have an area equivalent to 1/3 of the area of a circle with a 3 mile radius (e.g. 6000 acres).

– Determining the amount of linkage within a summarizing polygon
- Summarize the proportion of cells identified as linkage zones within the boundary of each polygon and then multiply that proportion by the area of the polygon.

- Model outputs
  - The DNRC model outputs four raster layers that identify the portions of road that bisect linkage zones, LZP model scores, the final LZP model scores, and the linkage zones and one polygon layer that identifies the amount of linkage within each polygon.

Biological Rationale

Minimum and maximum road links length requirements of 1 and ^{2}0 miles, respectively, were used to impose limitations on road segments that identify habitat linkage. The rationale for removing road links that did not meet these stipulations is as follows:

- Road segments that had less than 1 mile of contiguous minimal or low LPZ scores were considered too narrow to provide appreciable linkage.
- Road segments greater than 20 miles of contiguous minimal or low LPZ scores were not considered limiting for habitat linkage (i.e., not in need of special consideration).

The upper length limit was determined based on the approximate size of two female grizzly bear home ranges as illustrated below.

References:

Interagency Grizzly Bear Committee. 1994. Interagency Grizzly Bear Committee – Taskforce Report: grizzly bear/motorized access management. U.S.Forest Service, Missoula Montana. 7 pp.

Servheen, C., J.S. Waller, and P. Sandstrom. 2003. Identification and management of linkage zones for wildlife between the large blocks of public land in the northern Rocky Mountains (revised July 8, 2003). Unpublished Report. USFWS, Missoula, Montana.

DOCUMENT 5. INTEGRATION OF USFS AND BLM LYNX ANALYSIS UNIT DATA LAYERS

MEMORANDUM

Date: **January 31, 2006**

To: **Paul Anderson, Ross Baty, Ben Conard**

From: **Margaret Spence**

Subject: **Integration of USFS and BLM Lynx Analysis Unit Data Layers**

cc: **Pam Gunther**
Mike O'Herron
Brian Long
Donna Riebe

Project Number: **553-4495-001/102(02)**

Project Name: **MT DNRC HCP/EIS**

This memorandum summarizes the process used to integrate the lynx analysis unit (LAU) data layers obtained from the U.S. Forest Service (USFS) and the Bureau of Land Management (BLM). It follows a November 30, 2005, memorandum describing issues identified from a comparison of the LAU data layers. The summary includes a brief description of each data layer received, a discussion of issues that affected how the integration was accomplished, and a summary of how the combined LAU data layer can be used for analysis.

USFS LAU DATA LAYERS

Eight USFS LAU data layers were obtained by Lowell Whitney and provided to DNRC (Donna Riebe) who then passed them on to Parametrix. The LAUs were provided individually for each National Forest (NF) in ArcInfo coverage format:

- Beaverhead Deerlodge NF
- Flathead NF
- Gallatin NF
- Helena NF
- Kootenai NF
- Lewis & Clark NF (Jefferson Division)
- Lewis & Clark NF (Rocky Mountain Division)
- Lolo NF

For the most part, the LAUs from each NF do not extend into other adjacent NFs. The data layer from the Beaverhead Deerlodge NF is an exception. This issue is discussed in more detail later in this memorandum.

LAUs were not provided for three other NFs that have lands within the Planning Area:

- Bitterroot NF

- Custer NF
- Idaho Panhandle NF

The LAUs for Custer NF and Idaho Panhandle NF (if they exist) are likely not necessary. Custer NF lands are at least 10 miles away from the nearest DNRC parcel, while Idaho Panhandle NF lands within Montana are at least 5 miles away from the nearest DNRC parcels. Note that there is one DNRC parcel (27_N35_W36 with HCP = Y) that is located along the Idaho/Montana border and is directly adjacent to Idaho Panhandle NF lands in Idaho.

There are several DNRC parcels (with HCP = Y) adjacent to Bitterroot NF lands. I contacted the Bitterroot National Forest directly and obtained a copy of its LAU coverage.

BLM LAU DATA LAYER

The BLM's LAUs were provided as a single data layer by the state office; however this data layer was created by aggregating separate LAUs obtained from three individual field offices (FOs), Butte, Dillon, and Missoula.

ISSUES AFFECTING LAU DATA LAYER INTEGRATION

Several issues related to the various LAU data sets affected the process used to integrate the data sets into a single LAU data layer for analysis.

1. Many of the NFs are adjacent to each other and, consequently, share borders. However, these shared borders are not represented as the same line in adjacent LAUs from different NF data sets. These non-coincident lines create slivers of area that are either in two adjacent LAUs or in no LAUs.
2. As noted above, the Beaverhead-Deerlodge NF LAUs overlap (entirely or partially) several LAUs from other NFs (Bitterroot, Gallatin, Helena, and Lolo NFs). In many cases, the Beaverhead-Deerlodge NF LAU boundaries match those for the other NFs, while there are other cases in which the boundaries do not match. All the LAUs in the Beaverhead-Deerlodge NF data set have unique LAU codes. In all cases examined, however, the unique LAU identifier codes do not match between the overlapping data layers. For the most part, those Beaverhead-Deerlodge NF LAUs that overlap other NFs or are entirely outside any NF do not have a 6th level HUC name included in the shapefile's attribute table. There are a few cases where Beaverhead-Deerlodge NF LAUs with 6th level HUC names extend partially into adjacent NFs.
3. For the most part, the BLM LAUs from the Butte and Dillon FOs are comparable to those from the Beaverhead-Deerlodge NF. Based on their attributes, it appears that these two data layers came from the same original source. A closer examination indicates that BLM LAU boundaries along the border between the Bitterroot and Beaverhead-Deerlodge NFs are different than those in either of the NF data sets. Additionally, there are a few BLM LAUs east of the Beaverhead-Deerlodge NF data set (and north of the Gallatin National Forest) that appear to match the outer edges of the Beaverhead-Deerlodge NF data set. However, a few of these extend into the Gallatin NF. Three of the five Missoula FO LAUs extend partially into several LAUs in the northern portion of the Beaverhead-Deerlodge NF data set.
4. The BLM specialist that combined the three individual FO LAU layers did not correct any inconsistencies between boundaries shared between different FOs. Consequently, LAUs bisected by the Butte-Dillon FO boundary have different lines along the border from the two FO

data sets. This is the same situation that was encountered with adjacent LAUs in two different NFs.

HOW THE COMBINED LAU DATA LAYER WAS CREATED

Given the many sources of, inconsistent boundaries between, and overlapping LAUs from multiple data sets, the combined LAU data set was created in such a way that all individual LAUs from each data source were preserved. The amount of time it would take to vertically integrate all the layers and determine which actual LAU polygons apply in specific areas (i.e., where the Beaverhead-Deerlodge NF LAUs overlap other NFs) would be prohibitive from both a budget and schedule perspective. Rather than change any of the "official" LAUs used by each of the source entities, preserving all the individual LAUs facilitates the production of summaries consistent with the LAUs as managed by (and as received from) those entities. Creation of a combined LAU data set also allows for the generation of a single master data set from which to summarize lynx information by LAU from all LAU layers, rather than having to repeat analysis steps to create separate summaries for each of the individual LAU data layers.

Prior to combining the ten individual LAU data layers, a source-specific field was added to each layer to track that layer's unique LAU identifiers (names/codes). For each layer, this field was named to identify the layer source (e.g., BDNF_LAU for Beaverhead-Deerlodge NF LAUs). Some of the individual data layers included just an LAU code, while others just included a name, and others included both a code and a name. For the multiple BLM LAU polygons that did not include an LAU name, the 6th level HUC code was used (as shown in Table 1 below).

TABLE 5-1. EXAMPLE RECORDS AND SOURCE-SPECIFIC FIELD VALUES FROM THE COMBINED LAU DATA LAYER

BLM_LAU	BDNF_LAU	FHNF_LAU	GLNF_LAU	HLNF_LAU	LCJF_LAU	LCRF_LAU	LLNF_LAU	BRNF_LAU
100200071404	**102285**							
100200071602			**11129**					
100200071602			**11138**					
LittleLake	**102298 LittleLake**							
Birch	**102294 Birch**							
GrasshopperMid	**102295 GrasshopperMid**							
BullUp	**102300 BullUp**							
Miner	**102302 Miner**							
100200080503			**11138**					
Woody*	**102304 Woody***							
Bard*	**102293 Bard***							

Once the source-specific fields were added, all ten layers were combined into a single data layer (using the UNION tool) so that each LAU from each source was preserved. The source-specific

fields indicate for each polygon which LAU or LAUs that polygon is part of (as shown in Table 1 above).

HOW THE COMBINED LAU DATA LAYER CAN BE USED FOR ANALYSIS

The combined LAU data layer can be merged with any other data layers to provide summaries of information (e.g., acres of lynx habitat by LAU). Once a master analysis data layer is created, summaries can be generated separately by LAU source (i.e., use the source-specific fields). For example, if the combined LAU data layer is merged with lynx habitat, acres of lynx habitat by LAU can be summed separately using each source-specific field to identify individual LAUs for which lynx habitat acres are summed.

Note that, because the combined LAU data layer preserves all the original LAUs, some areas will be counted multiple times (depending on how many LAUs overlap) and some areas won't be counted at all (where adjacent LAU boundaries don't meet) when summaries are generated. Areas counted multiple times will range from slivers created by non-coincident adjacent NF boundaries to large overlaps between LAUs from different sources (e.g., Beaverhead-Deerlodge NF versus BLM LAUs).

Tables 2 and 3 below summarize the amount of LAU overlap within the Planning Area by land office. Within the Northwest Land Office, there are no areas of overlapping LAUs. For the Central and Southwest land offices, the overlap is primarily due to the almost complete overlap of the Beaverhead-Deerlodge NF and BLM LAUs (Table 2). Nearly 30% of the lands within the Central Land Office have overlapping LAUs, while LAUs overlap on almost $^{2}0$ percent of lands in the Southwe st Land Office.

TABLE 5-2. ACRES OF LAND IN THE PLANNING AREA BY NUMBER OF OVERLAPPING LAUS (BLM AND USFS)

		NUMBER OF OVERLAPPING LAUS				
LANDOFFICE	HCP	0	1	2	3	GRAND TOTAL
CLO	N	716,118	4,190	428,439	51	1,148,799
	Y	**38,673**	**788**	**73,717**		**113,178**
	(blank)	**11,730,712**	**3,531,280**	**6,121,558**	**249,356**	**21,632,906**
CLO Total		12,485,503	3,536,258	6,623,715	249,407	22,894,883
NWLO	N	41,079	1,785			42,864
	Y	**206,556**	**66,887**			**273,443**
	(blank)	**5,852,647**	**2,916,359**	**0**		**8,769,006**
NWLO Total		6,100,282	2,985,031	0		9,085,314
SWLO	N	32,794	23,461	15,942		72,197
	Y	**99,663**	**54,267**	**7,996**		**161,925**
	(blank)	**1,931,507**	**3,852,765**	**1,413,599**	**98**	**7,197,970**
SWLO Total		2,063,964	3,930,493	1,437,537	98	7,432,092
Grand Total		20,649,750	10,451,782	8,061,252	249,505	39,412,289

Excluding the BLM LAUs, the overlap of LAUs affects substantially less area in the Central and Southwest land offices (Table 3). All but one acre of land is overlapped by only two LAU data sets. The majority of these overlaps are due to the extension of the Beaverhead-Deerlodge NF LAU data set into adjacent NFs. As noted above, many of the Beaverhead-Deerlodge NF LAUs that overlap other NFs have an LAU code, but no name in the attribute file. While these LAUs may be included in the Beaverhead-Deerlodge NF's data layer, they may not be used by the NF for lynx management purposes. However, without further research and consultation with the Beaverhead-Deerlodge NF, this cannot be known for sure, and all LAUs in the data set should be retained for evaluation.

TABLE 5-3. ACRES OF LAND IN THE PLANNING AREA BY NUMBER OF OVERLAPPING LAUS (USFS ONLY).

		Number of Overlapping LAUs				
Landoffice	HCP	0	1	2	3	Grand Total
CLO	N	719,466	429,282	51		1,148,799
	Y	**38,673**	**74,505**			**113,178**
	(blank)	**11,826,498**	**9,556,685**	**249,723**		**21,632,906**
CLO Total		12,584,637	10,060,472	249,774		22,894,883
NWLO	N	41,079	1,785			42,864
	Y	**206,556**	**66,887**			**273,443**
	(blank)	**5,852,647**	**2,916,359**	**0**		**8,769,006**
NWLO Total		6,100,282	2,985,031	0		9,085,314
SWLO	N	33,613	38,230	355		72,197
	Y	**113,584**	**47,755**	**587**		**161,925**
	(blank)	**2,132,609**	**4,583,324**	**482,036**	**1**	**7,197,970**
SWLO Total		2,279,806	4,669,308	482,978	1	7,432,092
Grand Total		20,964,725	17,714,811	732,752	1	39,412,289

DOCUMENT 6. BALD EAGLE POTENTIAL HABITAT MODELING PROCEDURES

Prepared by Ross Baty, DNRC Forest Management Bureau, Wildlife Biologist; and John Hogland, DNRC GIS Analyst, November 16, 2006

Overview

The bald eagle potential habitat model identifies potential eagle habitat using readily accessible data layers that have documented accuracy levels and that cover broad extents. The inputs to this model include percent forest cover (2000), the national land cover dataset (NLCD 1992), a stream layer that identifies major streams and rivers, a field that identifies stream type, a polygon feature used to summarize the number of acres associated with potential habitat, and the field within the polygon feature that identifies the summarizing value. The outputs of this model include a raster layer that identifies all potential eagle habitat assumed suitable for nesting within the analysis area and a vector layer depicting the amount of potential habitat within the predefined summarizing polygon feature.

Procedures

Model procedures were developed to estimate potential habitat given parameters and characteristics indicated in the Montana Bald Eagle Management Plan (1994) and Habitat Management Guide for Bald Eagles in Northwestern Montana (1991). Conceptually, this model uses percent forest, the NLCD, and a stream layer to identify forested areas, large water bodies (greater than $^{2}0$ acres), and major streams respectively. While the Montana Bald Eagle management plan suggests using a minimum water body size of 40 acres, we selected a minimum water body size of $^{2}0$ acres to account for the course nature of the input datasets. Water bodies and streams are then buffered out 1 mile and overlaid with polygons comprised of forest with percent cover greater than or equal to 40 %, to identify areas that are both adequately forested and within 1 mile of water. Areas fitting these criteria are labeled potential eagle habitat and given a value of 1, while all other areas are labeled non habitat and given a value of 0. These values are then summarized, spatially, by a user defined polygon to determine the proportion of area within a given polygon that is eagle habitat. Multiplying this proportion by the area of that polygon identifies the amount of area within that polygon that is identified as potential eagle habitat. Known bald eagle nest locations from years 2000 to 2005 were overlaid on the resultant potential habitat map to assess how accurately the model was at predicting locations. Out of 333 known nest locations, 275 (82.5%) fell within identified habitat. A random subset of nest sites not falling within potential cover polygons was reviewed and the majority of such nests fell within areas of non-cover – presumably due to the presence of one to several large trees near rivers and/or lakes that did not occur at a density to be defined as forested pixels.

References

MBEWG (Montana Bald Eagle Working Group). 1991. Habitat management guide for bald eagles in northwestern Montana. USFS, Northern Region.

MBEWG. 1994. Montana bald eagle management plan, 2nd edition. U.S. Department of the Interior Bureau of Reclamation, Billings.

DOCUMENT 7. WOLF PACK MULTI-YEAR ANALYSIS METHODOLOGY

Prepared by Ross Baty, DNRC Forest Management Bureau, Wildlife Biologist; and John Hogland, DNRC GIS Analyst, September 7, 2006

Overview

To quantify the extent to which DNRC lands are associated with recent known wolf pack territories we combined the last 7 years of wolf pack data, provide by Montana Fish Wildlife and Parks (FWP), and calculated the number of acres where wolf pack territories occurred on DNRC lands for years 1, 2, 3, 4, 5, 6, and 7. We then assessed and reported this information by DNRC administrative unit. The output of this analysis provides a frequency distribution, which identifies where persistent wolf use has likely occurred on or nearby DNRC lands. To further illustrate the concept, the acreage represented for year 7 is that acreage where persistent wolf use likely occurred during each of the 7 years considered. It is important to note that these "wolf territory" areas are based on minimum convex polygons, sometimes based only on a few telemetry locations. For a number of packs, the area actually used by wolves during the period examined may be underrepresented.

Procedure

The wolf pack data provide by FWP came in shape file format and identified the spatial location of each wolf pack territory and the year in which that data were collected. In many instances wolf pack territories overlapped one another (both within and across years) thereby duplicating the same geographic space. To remove the duplicated acreage while maintaining the number of years a wolf pack shared a given location, we added a field to the wolf pack data and gave each record a value of 1. Using this data we then extracted each wolf pack territory by year. Geographic areas where wolf pack territories overlapped within a given year, were then dissolved (ArcGIS, 2004) to remove the effect of duplicated area. These layers where then unioned together (ArcGIS, 2004) to provide a spatial layer identifying the location and number of years each wolf pack occurred in a given geographic location. From this layer subsets were developed based on DNRC's administrative units and landholdings.

DOCUMENT 8. WOLVERINE HABITAT ANALYSIS ON DNRC LANDS

Prepared by Ross Baty, FMB Wildlife Biologist, and Jeff Schmalenberg, FMB Soil Scientist, 9/02/08

Overview

A growing body of evidence is indicating a close tie between wolverines and high elevation forest types (Copeland et al. 2007) and elevational zones with persistent snow into late spring (Aubry et al. 2007). Areas with persistent snow appear to be particularly important for female wolverines with reproductive dens (Aubry et al. 2007, Copeland et al. 2007). In Idaho, wolverines used an elevation zone year round that ranged from about 7,218 to 8,530 feet (Copeland et al. 2007), with only minor shifts to lower elevations in winter. In that study, wolverines primarily used vegetation communities dominated by whitebark pine in summer, and shifted use into Douglas-fir and lodgepole pine communities in winter, possibly to take advantage of a greater abundance of ungulate carrion (Copeland et al. 2007). While vegetative parameters provided some insight into habitat use by wolverines, topographic variables in that study provided greater predictive power in the models used. Thus, to quantify potential wolverine habitat on DNRC lands we used a combination of three attributes: 1) persistent late spring snow cover, 2) elevation, and 3) consideration of the spatial extent of snow cover in the vicinity of DNRC parcels that possessed abundance of snow cover. Because of influences of latitude, varying climatic patterns, and variability in the distribution and elevation of mountain ranges in western Montana, we were not comfortable simply using the elevation range of wolverine use in Idaho described by Copeland et al. (2007).

Procedure

To estimate areas with persistent spring snow cover in late spring, we analyzed snow cover from MODIS satellite data for June 1-8, 2008 (NOHRSC 2004). Snow levels in spring 2008 were average to slightly above average across western Montana, thus, the June 1-8 period was assumed to provide a reasonable snapshot to identify a land area likely to have appreciable amounts of persistent snow during most years. A data layer containing all DNRC lands in western Montana by Administrative Unit was overlaid on the satellite snow layer. Then pixels indicating snow cover were summed within 15 elevational classes that spanned 500 foot intervals to identify the zones most likely to have persistent snow on each Administrative Unit. Elevational zones for each Unit that contained appreciable snow cover were considered most likely to possess persistent spring snow important for wolverines. Elevational zones with greater than 50% snow cover in the early June period were typically considered "appreciable," however, occasionally some sites at very high elevations and more modest levels of snow were included. Lastly, a map of these identified snow covered DNRC lands was produced and examined to identify small isolated islands of snow covered habitat that would be unlikely to support denning wolverines. Parcels removed from consideration as habitat were those snow covered DNRC parcels that were associated with <5 square miles of similar snow covered habitat. In this manner, DNRC parcels associated with larger interconnected mountain ranges were favored for consideration as habitat versus smaller, isolated topographic features. Results were then described in a table as acres of wolverine habitat by

Administrative Unit and elevation zone, and the habitat parcels were depicted on a habitat map for the HCP lands and non-HCP lands within the planning area.

References

Aubry, K.L, K.S. McKelvey, and J.P. Copeland. 2007. Distribution and broadscale habitat associations of the wolverine in the contiguous United States. Journal of Wildlife Management 71:2147-2158.

Copeland, J.P., J. M. Peak, C. R. Groves, W. E. Melquist, K.S. McKelvey, G.W. McDaniel, C.D. Long, and C.E. Harris. 2007. Seasonal habitat associations of the wolverine in central Idaho. Journal of Wildlife Management 71:2201-2212.

NOHRSC. 2004. Snow Data Assimilation System (SNODAS) data products at NSIDC. National Operational Hydrologic Remote Sensing Center. Boulder, CO: National Snow and Ice Data Center. Digital media.

DOCUMENT 9 – ADDITIONAL WILDLIFE TABLES

TABLE 9-1. ACREAGE OF POTENTIAL HABITAT LINKAGE ON DNRC LANDS WITHIN THE PLANNING AREA AND HCP PROJECT AREA, BY LAND OFFICE AND LAND UNIT

	Acreage of Habitat Linkage Identified by Servheen et al (2003)		Acreage of Habitat Linkage Identified in the SVGBCA		Acreage of Habitat Linkage using DNRC Methodology in Remainder of the Planning Area [a,b]		Total Acreage of Habitat Linkage on DNRC Lands in the Planning Area (and HCP Project Area)	
LAND OFFICES and Administrative Unit Offices	**Servheen et al. portion of DNRC Lands in Planning Area**	**(Servheen et al. portion of HCP Project Area)**	**SVGBCA portion of DNRC Lands in Planning Area**	**(SVGBCA portion of HCP Project Area)**	**Remainder of DNRC Lands in Planning Area**	**(Remainder of HCP Project Area)**	**DNRC Lands in Planning Area**	**(HCP Project Area)**
NWLO	**32,655**	**(31,862)**	**19,821**	**(19,817)**	**24,876**	**(19,970)**	**77,352**	**(71,650)**
Kalispell Unit	0	(0)	0	(0)	7,665	(5,387)	7,665	(5,387)
Libby Unit	0	(0)	0	(0)	0	(0)	0	(0)
Plains Unit	643	(643)	0	(0)	2,243	(557)	2,886	(1,200)
Stillwater Unit	32,012	(31,219)	0	(0)	9,841	(8,899)	41,853	(40,118)
Swan Unit	0	(0)	19,821	(19,817)	5,127	(5,127)	24,948	(24,944)
SWLO	**6,778**	**(4,882)**	**0**	**(0)**	**54,901**	**(38,977)**	**61,679**	**(43,859)**
Anaconda Unit	0	(0)	0	(0)	21,453	(10,651)	21,453	(10,651)
Clearwater	0	(0)	0	(0)	19,517	(15,480)	19,517	(15,480)
Hamilton Unit	0	(0)	0	(0)	8,337	(7,697)	8,337	(7,697)
Missoula Unit	6,778	(4,882)	0	(0)	5,595	(5,149)	12,373	(10,031)
CLO	**0**	**(0)**	**0**	**(0)**	**179,110**	**(8,004)**	**179,110**	**(8,004)**
Bozeman Unit	0	(0)	0	(0)	36,615	(4,043)	36,615	(4,043)
Conrad Unit[c]	0	N/A	0	N/A	39,207	N/A	39,207	N/A
Dillon Unit	0	(0)	0	(0)	41,114	(952)	41,114	(952)
Helena Unit	0	(0)	0	(0)	62,174	(3,010)	62,174	(3,010)
Total	**39,433**	**(36,744)**	**19,821**	**(19,817)**	**258,887**	**(66,951)**	**318,141**	**(123,513)**

[a] Planning Area includes all of NWLO, SWLO, and CLO. [b] HCP Project Area includes all DNRC HCP-covered lands within the Planning Area.

[C] All lands in this unit occur outside to the HCP Project Area. Source: DNRC GIS 2008. See Wildlife, Document 4 for methodology and references.

TABLE 9-2. ACREAGES OF LANDS IN GRIZZLY BEAR RECOVERY ZONES AND ASSOCIATED NON-RECOVERY OCCUPIED HABITAT IN THE PLANNING AREA AND HCP PROJECT AREA BY LAND OFFICE AND ADMINISTRATIVE UNIT FOR BLOCKED AND SCATTERED LANDS, BY RECOVERY ZONE

Land Office and Recovery Zone[b] (Scattered or Blocked Status)	Recovery Zone in Planning Area -- All Ownerships[a]	Non-Recovery Occupied Habitat in Planning Area -- All Ownerships[a,c]	Recovery Zone on DNRC Lands in Planning Area	Non-Recovery Occupied Habitat on DNRC Lands in Planning Area[c]	Recovery Zone in HCP Project Area[d]	Non-Recovery Occupied Habitat in HCP Project Area[c,d]
NWLO subtotal	**4,626,501**	**1,615,487**	**148,895**	**49,436**	**146,120**	**37,718**
Kalispell Unit NCDE (Scattered)	216,467	300,781	7,603	7,828	7,079	5,965
Libby Unit CYE (Scattered)	914,265	587,602	2,861	9,989	2,861	9,865
Plains Unit CYE (Scattered)	424,498	285,628	3,994	2,257	3,313	2,257
Plains Unit NCDE (Scattered)	0	45,992	0	2,860	0	2,806
Stillwater Unit NCDE (Blocked)[g]	1,193,803	0	90,751	0	90,673	0
Stillwater Unit NCDE (Scattered)		395,449	3,519	26,502	2,494	16,826
Swan Unit NCDE (Blocked)	1,877,468	0	39,833	0	39,699	0
Swan Unit NCDE (Scattered)		34	334	0	0	0
SWLO subtotal	**961,438**	**821,552**	**9,199**	**50,816**	**7,442**	**41,348**
Anaconda Unit NCDE (Scattered)	0	141,430	0	5,347	0	4,709
Clearwater Unit NCDE (Scattered)	475,615	655,416	6,379	44,821	4,781	35,990
Hamilton Unit BE (Scattered)[e]	299,700	0	0	0	0	0
Missoula Unit BE (Scattered)[e]	105,572	0	341	0	182	0
Missoula Unit NCDE (Scattered)	80,551	24,707	2,478	648	2,478	648
CLO subtotal	**2,977,759**	**2,791,737**	**53,281**	**154,222**	**639**	**33,645**
Bozeman Unit GYE (Scattered)	1,110,366	1,116,446	40	21,365	0	8,132
Conrad Unit NCDE (Scattered)[f]	1,316,679	636,838	33,417	46,837	0	0
Dillon Unit GYE (Scattered)	0	780,013	0	60,224	0	19,582
Helena Unit NCDE (Scattered)	550,714	258,440	19,824	25,797	639	5,931
Total	***8,565,699***	***5,228,776***	***211,374***	**254,475**	***154,201***	***112,711***

* Table totals may not add up, due to rounding.

[a] Planning Area includes all of NWLO, SWLO, and CLO. For columns where acreages portrayed are for "all ownerships", the designation of scattered vs. blocked lands is not applicable and the row identifier as scattered vs. blocked should be ignored.

[b] NCDE= Northern Continental Divide Ecosystem, CYE = Cabinet-Yaak Ecosystem, BE = Bitterroot Ecosystem, GYE = Greater Yellowstone Ecosystem.

[c] The scattered vs. blocked status is not relevant to the acres portrayed "all ownerships."

[c] Non-recovery occupied habitat designation from Wittinger (2002).

[d] HCP Project Area includes all DNRC HCP-covered lands within the Planning Area.

[e] The Bitterroot Recovery Zone (BE) is currently not considered occupied by grizzly bears.

[f] Lands on this unit occur outside of the HCP Project Area.

[g] Includes the Coal Creek State Forest and majority of the Stillwater State Forest.

Source: DNRC GIS 2008

TABLE 9-3. ACREAGES OF LANDS IN GRIZZLY BEAR RECOVERY ZONES BY GRIZZLY BEAR MANAGEMENT UNIT AND GRIZZLY BEAR MANAGEMENT UNIT SUBUNIT IN THE PLANNING AREA AND HCP PROJECT AREA BY DNRC LAND OFFICE AND ADMINISTRATIVE UNIT

Land Offices and Unit Offices (Scattered or Blocked Status)	Recovery Zone[b]	Grizzly Bear Management Unit[c]	Grizzly Bear Management Unit Subunit[c]	Acreages of Grizzly Bear Subunits within the Planning Area -- All Ownerships[a]	Acreages of Grizzly Bear Subunits on DNRC Lands within the Planning Area[a] (% of Subunit)		Acreages of HCP Project Area Lands within Grizzly Bear Subunits[f] (% of Subunit)	
NWLO Subtotal				**1,380,806**	**148,866**	**(10.8)**	**146,095**	**(10.6)**
Kalispell Unit (Scattered)	NCDE	Hungry Horse	Peters Ridge	25,109	742	(3.0)	742	(3.0)
Kalispell Unit (Scattered)	NCDE	Lower North Fork Flathead	Cedar Teakettle	31,704	481	(1.5)	481	(1.5)
Kalispell Unit (Scattered)	NCDE	Mission Range	Crane Mtn	36,692	402	(1.1)	85	(0.2)
Kalispell Unit (Scattered)	NCDE	Rattlesnake	South Fork Jocko	49,187	631	(1.3)	631	(1.3)
Kalispell Unit (Scattered)	NCDE	Sullivan	Noisy Red Owl	37,096	5,340	(14.4)	5,137	(13.8)
Libby Unit (Scattered)	CYE	no. 4-10	Newton	64,284	266	(0.4)	266	(0.4)
Libby Unit (Scattered)	CYE	no. 4-3	Spar	71,472	642	(0.9)	642	(0.9)
Libby Unit (Scattered)	CYE	no. 4-9	Callahan	43,449	663	(1.5)	663	(1.5)
Libby Unit (Scattered)	CYE	no. 5-1	Cedar	30,804	10	(<0.1)	10	(< 0.1)
Libby Unit (Scattered)	CYE	no. 5-2	Snowshoe	42,926	639	(1.5)	639	(1.5)
Libby Unit (Scattered)	CYE	no. 7-2	Snowshoe	22,304	639	(2.9)	639	(2.9)
Plains Unit (Scattered)	CYE	no. 7-4	Bull	81,719	311	(0.4)	311	(0.4)
Plains Unit (Scattered)	CYE	no. 7-6	Wanless	23,705	733	(3.1)	733	(3.1)
Plains Unit (Scattered)	CYE	no. 7-8	Vermilion	68,533	266	(0.4)	266	(0.4)
Plains Unit (Scattered)	CYE	no name 2	Mount Headley	152,394	2,678	(1.8)	1,998	(1.3)
Stillwater Unit (Blocked)	NCDE	Lower North Fork Flathead	Werner Creek	28,607	383	(1.3)	383	(1.3)
Stillwater Unit (Blocked)	NCDE	Murphy Lake	Krinklehorn	47,487	326	(0.7)	326	(0.7)
Stillwater Unit (Blocked)	NCDE	Stillwater River	Lazy Creek	34,559	14,443	(41.8)	14,365	(41.6)
Stillwater Unit (Blocked)	NCDE	Stillwater River	Stryker	40,860	32,923	(80.6)	32,923	(80.6)

Land Offices and Unit Offices (Scattered or Blocked Status)	Recovery Zone[b]	Grizzly Bear Management Unit[c]	Grizzly Bear Management Unit Subunit[c]	Acreages of Grizzly Bear Subunits within the Planning Area -- All Ownerships[a]	Acreages of Grizzly Bear Subunits on DNRC Lands within the Planning Area[a] (% of Subunit)		Acreages of HCP Project Area Lands within Grizzly Bear Subunits[f] (% of Subunit)	
Stillwater Unit (Blocked)	NCDE	Stillwater River	Upper Whitefish	32,201	27,035	(84.0)	27,035	(84.0)
Stillwater Unit (Blocked)	NCDE	Upper North Fork Flathead	Coal & South Coal	25,249	413	(1.6)	413	(1.6)
Stillwater Unit (Blocked)	NCDE	Upper North Fork Flathead	Hay Creek	33,658	1,807	(5.4)	1,807	(5.4)
Stillwater Unit (Blocked)	NCDE	Upper North Fork Flathead	State Coal Cyclone	31,366	13,420	(42.8)	13,420	(42.8)
Stillwater Unit (Scattered)	NCDE	Lower North Fork Flathead	Lower Big Creek	30,343	82	(0.3)	82	(0.3)
Stillwater Unit (Scattered)	NCDE	Stillwater River	Stryker	40,860	50	(0.1)	5	(< 0.1)
Stillwater Unit (Scattered)	NCDE	Upper North Fork Flathead	Hay Creek	33,658	337	(1.0)	0	(0.0)
Stillwater Unit (Scattered)	NCDE	Upper North Fork Flathead	Ketchikan	23,911	1,097	(4.6)	1,097	(4.6)
Stillwater Unit (Scattered)	NCDE	Upper North Fork Flathead	Lower Whale	19,020	1,100	(5.8)	1,100	(5.8)
Stillwater Unit (Scattered)	NCDE	Upper North Fork Flathead	Quartz Creek	40,246	641	(1.6)	0	(0.0)
Stillwater Unit (Scattered)	NCDE	Upper North Fork Flathead	Red Meadow Moose	33,367	198	(0.6)	198	(0.6)
Swan Unit (Blocked)	NCDE	Bunker	Goat Creek	27,602	6,028	(21.8)	5,894	(21.4)
Swan Unit (Blocked)	NCDE	Bunker	Lion Creek	29,047	3,067	(10.6)	3,067	(10.6)
Swan Unit (Blocked)	NCDE	Bunker	So Fork Lost Soup	29,883	18,324	(61.3)	18,324	(61.3)
Swan Unit (Blocked)	NCDE	Mission Range	Piper Creek	30,992	177	(0.6)	177	(0.6)
Swan Unit (Blocked)	NCDE	Mission Range	Porcupine Woodward	37,666	12,237	(32.5)	12,237	(32.5)
Swan Unit (Scattered)	NCDE	Lower Middle Fork Flathead	Stanton Paola	23,361	334	(1.4)	0	(0.0)
SWLO Subtotal				**265,292**	**9,181**	**(3.5)**	**7,424**	**(2.8)**

Land Offices and Unit Offices (Scattered or Blocked Status)	Recovery Zone[b]	Grizzly Bear Management Unit[c]	Grizzly Bear Management Unit Subunit[c]	Acreages of Grizzly Bear Subunits within the Planning Area -- All Ownerships[a]	Acreages of Grizzly Bear Subunits on DNRC Lands within the Planning Area[a] (% of Subunit)		Acreages of HCP Project Area Lands within Grizzly Bear Subunits[f] (% of Subunit)	
Clearwater Unit (Scattered)	NCDE	Monture Landers Fork	Alice Creek	70,175	2,428	(3.5)	1,194	(1.7)
Clearwater Unit (Scattered)	NCDE	Monture Landers Fork	Arrastra Mountain	69,256	1,696	(2.4)	1,696	(2.4)
Clearwater Unit (Scattered)	NCDE	Monture Landers Fork	Red Mountain	76,674	2,251	(2.9)	1,888	(2.5)
Hamilton Unit (Scattered)[d]	BE	N/A	N/A	0	0	(0.0)	0	(0.0)
Missoula Unit (Scattered)[d]	BE	N/A	N/A	0	341	(<0.1)	182	(0.0)
Missoula Unit (Scattered)	NCDE	Rattlesnake	South Fork Jocko	49,187	2,464	(5.0)	2,464	(5.0)

Land Offices and Unit Offices (Scattered or Blocked Status)	Recovery Zone[b]	Grizzly Bear Management Unit[c]	Grizzly Bear Management Unit Subunit[c]	Acreages of Grizzly Bear Subunits within the Planning Area -- All Ownerships[a]	Acreages of Grizzly Bear Subunits on DNRC Lands within the Planning Area[a] (% of Subunit)		Acreages of HCP Project Area Lands within Grizzly Bear Subunits[f] (% of Subunit)	
CLO Subtotal				**933,107**	**53,280**	**(5.7)**	**639**	**(0.1)**
Bozeman Unit (Scattered)	GYE	Hellroaring	Hellroaring/Bear #1	118,248	40	(<0.1)	0	(0.0)
Conrad Unit (Scattered) [e]	NCDE	Badger Two Medicine	Heart Butte	71,026	143	(0.2)	0	(0.0)
Conrad Unit (Scattered) [e]	NCDE	Birch Teton	Birch	94,638	6,165	(6.5)	0	(0.0)
Conrad Unit (Scattered) [e]	NCDE	Birch Teton	Teton	113,192	5,267	(4.7)	0	(0.0)
Conrad Unit (Scattered) [e]	NCDE	Teton Sun River	Deep Creek	104,681	11,000	(10.5)	0	(0.0)
Conrad Unit (Scattered) [e]	NCDE	Teton Sun River	Pine Butte	87,160	10,841	(12.4)	0	(0.0)
Helena Unit (Scattered)	NCDE	Dearborn Elk Creek	Falls Creek	84,931	1,997	(2.4)	639	(0.8)
Helena Unit (Scattered)	NCDE	Dearborn Elk Creek	Scapegoat	100,865	11,558	(11.5)	0	(0.0)
Helena Unit (Scattered)	NCDE	South Fork Sun Beaver Willow	South Fork Willow	120,685	2,582	(2.1)	0	(0.0)
Helena Unit (Scattered)	NCDE	South Fork Sun Beaver Willow	West Fork Beaver	142,362	3,686	(2.6)	0	(0.0)
Total				**2,530,018**	**211,326**	**(8.4)**	**154,158**	**(6.1)**

[a] Planning Area includes all of NWLO, SWLO, and CLO. For columns where acreages portrayed are for "all ownerships", the designation of scattered vs. blocked lands is not applicable and the row identifier as scattered vs. blocked should be ignored.

[b] NCDE= Northern Continental Divide Ecosystem, CYE = Cabinet-Yaak Ecosystem, BE = Bitterroot Ecosystem, GYE = Greater Yellowstone Ecosystem.

[c] Grizzly bear management unit and subunit names follow established federal naming convention.

[d] The Bitterroot Recovery Zone (BE) is currently not considered occupied by grizzly bears.

[e] Lands on this unit occur outside of the HCP Project Area.

[f] HCP Project Area includes all DNRC HCP-covered lands within the Planning Area.

Source: DNRC GIS 2008

TABLE 9-4. ACREAGE OF FORESTED GRIZZLY BEAR HIDING COVER (DNRC 2002) AND NON-HIDING COVER FOR RECOVERY ZONES AND NON-RECOVERY OCCUPIED HABITAT ON DNRC LANDS IN THE HCP PLANNING AREA AND PROJECT AREA

	ACRES OF FORESTED GRIZZLY BEAR HIDING COVER							
	DNRC LANDS IN PLANNING AREA[a]				HCP PROJECT AREA[b]			
	HIDING COVER (% OF TOTAL)		NON-HIDING COVER (% OF TOTAL)		HIDING COVER (% OF TOTAL)		NON-HIDING COVER (% OF TOTAL)	
Recovery Zone	114,875	(62.8)	96,499	(34.1)	107,479	(65.8)	46,721	(45.1)
Non-Recovery Occupied Habitat[c]	68,080	(37.2)	186,446	(65.9)	55,813	(34.2)	56,944	(54.9)
Total	182,955	(100.0)	282,945	(100.0)	163,292	(100.0)	103,666	(100.0)

[a] Planning Area includes all of NWLO, SWLO, and CLO.

[b] HCP Project Area includes all DNRC HCP-covered lands within the Planning Area.

[c] Non-recovery occupied habitat designation from Wittinger (2002).

Source: DNRC GIS 2008. Data on cover provided by shrubs and topographic features are not available.

TABLE 9-5. ACREAGE OF FORESTED GRIZZLY BEAR HIDING COVER (DNRC 2002) AND ACREAGE OF NON-HIDING COVER ON DNRC LANDS WITHIN THE PLANNING AREA

	DNRC LANDS IN THE PLANNING AREA[b]				HCP PROJECT AREA[c]			
	RECOVERY ZONE		NON-RECOVERY OCCUPIED HABITAT[d]		RECOVERY ZONE		NON-RECOVERY OCCUPIED HABITAT[d]	
LAND OFFICES AND UNIT OFFICES BY RECOVERY ZONE[a] (SCATTERED OR BLOCKED STATUS)[a]	ACRES OF HIDING COVER	% OF TOTAL RECOVERY ZONE IN HIDING COVER	ACRES OF HIDING COVER	% OF TOTAL RECOVERY ZONE IN HIDING COVER	ACRES OF HIDING COVER	% OF TOTAL RECOVERY ZONE IN HIDING COVER	ACRES OF HIDING COVER	% OF TOTAL RECOVERY ZONE IN HIDING COVER
NWLO	**104,688**	**(70.3)**	**31,727**	**(64.1)**	**103,248**	**(70.7)**	**24,966**	**(66.1)**
Kalispell Unit NCDE (Scattered)	6,230	(82.0)	6,131	(78.3)	5,989	(84.6)	4,467	(74.9)
Libby Unit CYE (Scattered)	1,763	(61.6)	5,905	(59.1)	1,763	(61.6)	5,831	(59.1)
Plains Unit CYE (Scattered)	3,248	(81.3)	1,342	(59.5)	2,629	(79.3)	1,342	(59.5)
Plains Unit NCDE (Scattered)[e]	N/A	N/A	2,313	(80.9)	N/A	N/A	2,313	(82.4)
Stillwater Unit NCDE (Blocked)[e]	60,020	(66.1)	N/A	N/A	59,956	(66.1)	N/A	N/A
Stillwater Unit NCDE (Scattered)	2,047	(58.2)	16,036	(60.4)	1,789	(71.7)	11,013	(65.3)
Swan Unit NCDE (Blocked)[e]	31,150	(78.2)	N/A	(0.0)	31,121	(78.4)	N/A	(0.0)
Swan Unit NCDE (Scattered)[e]	230	(68.9)	N/A	(0.0)	N/A	N/A	N/A	(0.0)
SWLO	**4,876**	**(53.0)**	**23,739**	**(46.7)**	**4,000**	**(53.8)**	**20,527**	**(49.6)**
Anaconda Unit NCDE (Scattered)[e]	N/A	N/A	3,376	(63.1)	N/A	N/A	3,114	(66.1)
Clearwater Unit NCDE (Scattered)	3,179	(49.8)	20,342	(45.4)	2,397	(50.1)	17,393	(48.3)
Hamilton Unit BE (Scattered)[e, f]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Missoula Unit BE (Scattered)[e, f]	145	(42.6)	N/A	N/A	52	(28.5)	N/A	N/A
Missoula Unit NCDE (Scattered)	1,552	(62.6)	20	(03.2)	1,552	(62.6)	20	(03.2)

Land Offices and Unit Offices by Recovery Zone[a] (Scattered or Blocked Status)[a]	DNRC Lands in the Planning Area[b]				HCP Project Area[c]			
	Recovery Zone		Non-Recovery Occupied Habitat[d]		Recovery Zone		Non-Recovery Occupied Habitat[d]	
	Acres of Hiding Cover	% of Total Recovery Zone in Hiding Cover	Acres of Hiding Cover	% of Total Recovery Zone in Hiding Cover	Acres of Hiding Cover	% of Total Recovery Zone in Hiding Cover	Acres of Hiding Cover	% of Total Recovery Zone in Hiding Cover
CLO	**5,311**	**(10.0)**	**12,614**	**(8.2)**	**231**	**(36.1)**	**10,320**	**(30.7)**
Bozeman Unit GYE (Scattered)[e]	0	(0.0)	5,242	(24.5)	N/A	N/A	4,711	(57.9)
Conrad Unit NCDE (Scattered)[e,g]	4,480	(13.4)	0	(0.0)	N/A	N/A	N/A	N/A
Dillon Unit GYE (Scattered)[e]	N/A	N/A	3,932	(06.5)	N/A	N/A	2,214	(11.3)
Helena Unit NCDE (Scattered)	831	(04.2)	3,440	(13.3)	231	(36.1)	3,394	(57.2)

[a] NCDE= Northern Continental Divide Ecosystem, CYE = Cabinet-Yaak Ecosystem, BE = Bitterroot Ecosystem, GYE = Greater Yellowstone Ecosystem.

[b] Planning Area includes all of NWLO, SWLO, and CLO.

[c] HCP Project Area includes all DNRC HCP-covered lands within the Planning Area.

[d] Non-recovery occupied habitat designation from Wittinger (2002).

[e] N/A = not applicable. Where N/A is listed in the table, there is no such land area in the given unit.

[f] The Bitterroot Recovery Zone (BE) is currently not considered occupied by grizzly bears.

[g] All lands on this unit occur outside of the HCP Project Area.

Source: DNRC GIS 2008

TABLE 9-6. NUMBER OF PARCELS AND CORRESPONDING ACREAGE BY OPEN ROAD DENSITY CLASS USING LINEAR CALCULATION OF MILES PER SQUARE MILE FOR DNRC BLOCKED AND SCATTERED LANDS IN RECOVERY ZONES AND NON-RECOVERY OCCUPIED HABITAT IN THE PLANNING AREA

Land Offices and Unit Offices by Recovery Zone[a] (Scattered or Blocked Status)	Open Roads on DNRC Lands in the Planning Area[b]					
	Recovery Zone			Non-Recovery Occupied Habitat[f]		
	Density Class mi/mi^2	Parcel Count	Corresponding Acres	Density Class mi/mi^2	Parcel Count	Corresponding Acres
NWLO		**315**	**148,895**		**166**	**49,487**
Kalispell Unit NCDE (Scattered)	0-0.99	15	3,007	0-0.99	20	3,454
	1.0-1.99	8	2,160	1.0-1.99	2	665
	>2.0	9	2,435	>2.0	12	3,709
Libby Unit CYE (Scattered)	0-0.99	4	1,922	0-0.99	11	2,075
	1.0-1.99	1	266	1.0-1.99	7	2,891
	>2.0	2	673	>2.0	12	5,023
Plains Unit CYE (Scattered)	0-0.99	8	1,204	0-0.99	6	757
	1.0-1.99	2	908	1.0-1.99	0	0
	>2.0	6	1,882	>2.0	6	1,500
Plains Unit NCDE (Scattered)[g]	0-0.99	N/A	N/A	0-0.99	5	1,589
	1.0-1.99	N/A	N/A	1.0-1.99	1	582
	>2.0	N/A	N/A	>2.0	3	688
Stillwater Unit NCDE (Blocked)[e,g]	0-0.99	97	53,132	0-0.99	N/A	N/A
	1.0-1.99	35	21,347	1.0-1.99	N/A	N/A
	>2.0	34	16,272	>2.0	N/A	N/A
Stillwater Unit NCDE (Scattered)	0-0.99	17	2,183	0-0.99	32	9,272
	1.0-1.99	2	1,289	1.0-1.99	14	5,919
	>2.0	6	47	>2.0	35	11,364
Swan Unit NCDE (Blocked)[g]	0-0.99	44	26,505	0-0.99	N/A	N/A
	1.0-1.99	18	11,106	1.0-1.99	N/A	N/A
	>2.0	6	2,222	>2.0	N/A	N/A

Land Offices and Unit Offices by Recovery Zone[a] (Scattered or Blocked Status)	Open Roads on DNRC Lands in the Planning Area[b]					
	Recovery Zone			Non-Recovery Occupied Habitat[f]		
	Density Class mi/mi^2	Parcel Count	Corresponding Acres	Density Class mi/mi^2	Parcel Count	Corresponding Acres
Swan Unit NCDE (Scattered)[g]	0-0.99	1	334	0-0.99	N/A	N/A
	1.0-1.99	0	0	1.0-1.99	N/A	N/A
	>2.0	0	0	>2.0	N/A	N/A
SWLO		**29**	**9,199**		**133**	**50,816**
Anaconda Unit NCDE (Scattered)[g]	0-0.99	N/A	N/A	0-0.99	5	2,949
	1.0-1.99	N/A	N/A	1.0-1.99	3	1,777
	>2.0	N/A	N/A	>2.0	1	620
Clearwater Unit NCDE (Scattered)	0-0.99	8	2,277	0-0.99	77	30,203
	1.0-1.99	1	76	1.0-1.99	9	3,636
	>2.0	12	4,027	>2.0	35	10,982
Hamilton Unit BE (Scattered)[c,g]	0-0.99	N/A	N/A	0-0.99	N/A	N/A
	1.0-1.99	N/A	N/A	1.0-1.99	N/A	N/A
	>2.0	N/A	N/A	>2.0	N/A	N/A
Missoula Unit BE (Scattered)[c, g]	0-0.99	0	0	0-0.99	N/A	N/A
	1.0-1.99	1	182	1.0-1.99	N/A	N/A
	>2.0	1	159	>2.0	N/A	N/A
Missoula Unit NCDE (Scattered)	0-0.99	2	657	0-0.99	3	648
	1.0-1.99	3	1,183	1.0-1.99	0	0
	>2.0	1	638	>2.0	0	0

Land Offices and Unit Offices by Recovery Zone[a] (Scattered or Blocked Status)	Open Roads on DNRC Lands in the Planning Area[b]					
	Recovery Zone			Non-Recovery Occupied Habitat[f]		
	Density Class mi/mi^2	Parcel Count	Corresponding Acres	Density Class mi/mi^2	Parcel Count	Corresponding Acres
CLO		**237**	**53,281**		**523**	**154,222**
Bozeman Unit GYE (Scattered)	0-0.99	1	0	0-0.99	30	11,920
	1.0-1.99	0	0	1.0-1.99	10	4,496
	>2.0	1	40	>2.0	12	4,949
Conrad Unit NCDE (Scattered)[d]	0-0.99	62	13,016	0-0.99	152	26,268
	1.0-1.99	22	5,693	1.0-1.99	35	10,984
	>2.0	75	14,708	>2.0	50	9,584
Dillon Unit GYE (Scattered)[g]	0-0.99	N/A	N/A	0-0.99	83	35,643
	1.0-1.99	N/A	N/A	1.0-1.99	26	13,265
	>2.0	N/A	N/A	>2.0	29	11,316
Helena Unit NCDE (Scattered)	0-0.99	49	12,569	0-0.99	64	18,100
	1.0-1.99	14	4,025	1.0-1.99	19	6,076
	>2.0	13	3,230	>2.0	13	1,621

Note: Roads classified as proposed, abandoned, or reclaimed were not included in density calculations

[a] NCDE= Northern Continental Divide Ecosystem, CYE = Cabinet-Yaak Ecosystem, BE = Bitterroot Ecosystem, GYE = Greater Yellowstone Ecosystem.

[b] Planning Area includes all of NWLO, SWLO, and CLO.

[c] The Bitterroot Recovery Zone (BE) is currently not considered occupied by grizzly bears.

[d] All lands on this unit occur outside of the HCP Project Area.

[e] Includes the Coal Creek State Forest, and the blocked portion of the Stillwater State Forest that occurs within the NCDE.

[f] Non-recovery occupied habitat designation from Wittinger (2002).

[g] N/A = not applicable. Where N/A is listed in the table, there is no such land area in the given unit.

Source: DNRC GIS 2008

TABLE 9-7. NUMBER OF PARCELS AND CORRESPONDING ACREAGE BY TOTAL ROAD DENSITY CLASS USING LINEAR CALCULATION OF MILES PER SQUARE MILE FOR DNRC BLOCKED AND SCATTERED LANDS IN RECOVERY ZONES AND NON-RECOVERY OCCUPIED HABITAT IN THE PLANNING

Land Offices and Unit Offices by Recovery Zone[a] (Scattered or Blocked Status)	Total Roads on DNRC Lands in the Planning Area[b]					
	Recovery Zone			Non-Recovery Occupied Habitat[f]		
	Density Class mi/mi^2	Parcel Count	Corresponding Acres	Density Class mi/mi^2	Parcel Count	Corresponding Acres
NWLO		**315**	**148,895**		**166**	**49,538**
Kalispell Unit NCDE (Scattered)	0-0.99	10	1,050	0-0.99	16	2,469
	1.0-1.99	4	1,029	1.0-1.99	2	665
	>2.0	18	5,523	>2.0	16	4,694
Libby Unit CYE (Scattered)	0-0.99	3	1,283	0-0.99	5	359
	1.0-1.99	2	905	1.0-1.99	5	1,953
	>2.0	2	673	>2.0	20	7,678
Plains Unit CYE (Scattered)	0-0.99	8	1,204	0-0.99	7	763
	1.0-1.99	2	908	1.0-1.99	0	0
	>2.0	6	1,882	>2.0	8	1,548
Plains Unit NCDE (Scattered)[g]	0-0.99	N/A	N/A	0-0.99	3	942
	1.0-1.99	N/A	N/A	1.0-1.99	1	582
	>2.0	N/A	N/A	>2.0	2	1,282
Stillwater Unit NCDE (Blocked)[e,g]	0-0.99	43	21,835	0-0.99	N/A	N/A
	1.0-1.99	34	19,779	1.0-1.99	N/A	N/A
	>2.0	89	49,137	>2.0	N/A	N/A
Stillwater Unit NCDE (Scattered)	0-0.99	13	1,083	0-0.99	14	1,080
	1.0-1.99	3	1,290	1.0-1.99	7	2,943
	>2.0	9	1,145	>2.0	60	22,581
Swan Unit NCDE (Blocked)[g]	0-0.99	13	7,602	0-0.99	N/A	N/A
	1.0-1.99	4	2,330	1.0-1.99	N/A	N/A
	>2.0	51	29,902	>2.0	N/A	N/A
Swan Unit NCDE (Scattered)[g]	0-0.99	1	334	0-0.99	N/A	N/A
	1.0-1.99	0	0	1.0-1.99	N/A	N/A
	>2.0	0	0	>2.0	N/A	N/A

Land Offices and Unit Offices by Recovery Zone[a] (Scattered or Blocked Status)	Total Roads on DNRC Lands in the Planning Area[b]					
	Recovery Zone			Non-Recovery Occupied Habitat[f]		
	Density Class mi/mi^2	Parcel Count	Corresponding Acres	Density Class mi/mi^2	Parcel Count	Corresponding Acres
SWLO		**29**	**9,199**		**133**	**50,816**
Anaconda Unit NCDE (Scattered)[g]	0-0.99	N/A	N/A	0-0.99	3	1,670
	1.0-1.99	N/A	N/A	1.0-1.99	3	1,777
	>2.0	N/A	N/A	>2.0	3	1,900
Clearwater Unit NCDE (Scattered)	0-0.99	6	1,556	0-0.99	44	16,503
	1.0-1.99	1	76	1.0-1.99	5	1,618
	>2.0	14	4,747	>2.0	72	26,700
Hamilton Unit BE (Scattered)[c,g]	0-0.99	N/A	N/A	0-0.99	N/A	N/A
	1.0-1.99	N/A	N/A	1.0-1.99	N/A	N/A
	>2.0	N/A	N/A	>2.0	N/A	N/A
Missoula Unit BE (Scattered)[c, g]	0-0.99	0	0	0-0.99	N/A	N/A
	1.0-1.99	0	0	1.0-1.99	N/A	N/A
	>2.0	2	341	>2.0	N/A	N/A
Missoula Unit NCDE (Scattered)	0-0.99	2	657	0-0.99	3	648
	1.0-1.99	2	627	1.0-1.99	0	0
	>2.0	2	1,195	>2.0	0	0

Land Offices and Unit Offices by Recovery Zone[a] (Scattered or Blocked Status)	Total Roads on DNRC Lands in the Planning Area[b]					
	Recovery Zone			Non-Recovery Occupied Habitat[f]		
	Density Class mi/mi^2	Parcel Count	Corresponding Acres	Density Class mi/mi^2	Parcel Count	Corresponding Acres
CLO		**237**	**53,281**		**523**	**154,222**
Bozeman Unit GYE (Scattered)	0-0.99	2	40	0-0.99	30	11,920
	1.0-1.99	0	0	1.0-1.99	10	4,496
	>2.0	0	0	>2.0	12	4,949
Conrad Unit NCDE (Scattered)[d]	0-0.99	62	13,016	0-0.99	152	26,268
	1.0-1.99	22	5,693	1.0-1.99	35	10,984
	>2.0	75	14,708	>2.0	50	9,584
Dillon Unit GYE (Scattered)[g]	0-0.99	N/A	N/A	0-0.99	81	34,385
	1.0-1.99	N/A	N/A	1.0-1.99	27	13,883
	>2.0	N/A	N/A	>2.0	30	11,956
Helena Unit NCDE (Scattered)	0-0.99	48	11,933	0-0.99	62	17,257
	1.0-1.99	14	4,025	1.0-1.99	18	5,426
	>2.0	14	3,866	>2.0	16	3,114

Note: Roads classified as proposed, abandoned, or reclaimed were not included in density calculations.

[a] NCDE= Northern Continental Divide Ecosystem, CYE = Cabinet-Yaak Ecosystem, BE = Bitterroot Ecosystem, GYE = Greater Yellowstone Ecosystem.

[b] Planning Area includes all of NWLO, SWLO, and CLO.

[c] The Bitterroot Recovery Zone (BE) is currently not considered occupied by grizzly bears.

[d] All lands on this unit occur outside of the HCP Project Area.

[e] Includes the Coal Creek State Forest, and the blocked portion of the Stillwater State Forest that occurs within the NCDE. N/A = not applicable. There is no NROH in the Stillwater Unit NCDE blocked lands.

[f] Non-recovery occupied habitat designation from Wittinger (2002).

[g] N/A = not applicable. Where N/A is listed in the table, there is no such land area in the given unit.

Source: DNRC GIS 2008

TABLE 9-8. NUMBER OF PARCELS AND CORRESPONDING ACREAGE BY OPEN ROAD DENSITY CLASS USING LINEAR CALCULATION OF MILES PER SQUARE MILE FOR DNRC BLOCKED AND SCATTERED LANDS IN RECOVERY ZONES AND NON-RECOVERY OCCUPIED HABITAT IN THE HCP PROJECT AREA

Land Offices and Unit Offices by Recovery Zone[a] (Scattered or Blocked Status)	Open Roads on DNRC Lands in the HCP Project Area[b]					
	Recovery Zone			Non-Recovery Occupied Habitat[f]		
	Density Class mi/mi^2	Parcel Count	Corresponding Acres	Density Class mi/mi^2	Parcel Count	Corresponding Acres
NWLO		**291**	**146,120**		**111**	**37,765**
Kalispell Unit NCDE (Scattered)	0-0.99	13	3,005	0-0.99	10	2,729
	1.0-1.99	5	1,954	1.0-1.99	2	665
	>2.0	8	2,119	>2.0	7	2,571
Libby Unit CYE (Scattered)	0-0.99	4	1,922	0-0.99	9	1,951
	1.0-1.99	1	266	1.0-1.99	7	2,891
	>2.0	2	673	>2.0	12	5,023
Plains Unit CYE (Scattered)	0-0.99	6	524	0-0.99	6	757
	1.0-1.99	2	908	1.0-1.99	0	0
	>2.0	6	1,882	>2.0	6	1,500
Plains Unit NCDE (Scattered)[g]	0-0.99	N/A	N/A	0-0.99	4	1,583
	1.0-1.99	N/A	N/A	1.0-1.99	1	582
	>2.0	N/A	N/A	>2.0	1	641
Stillwater Unit NCDE (Blocked)[e,g]	0-0.99	97	53,132	0-0.99	N/A	N/A
	1.0-1.99	35	21,347	1.0-1.99	N/A	N/A
	>2.0	33	16,194	>2.0	N/A	N/A
Stillwater Unit NCDE (Scattered)	0-0.99	8	1,845	0-0.99	15	5,927
	1.0-1.99	1	646	1.0-1.99	11	4,977
	>2.0	3	2	>2.0	20	5,969
Swan Unit NCDE (Blocked)[g]	0-0.99	44	26,505	0-0.99	N/A	N/A
	1.0-1.99	18	11,106	1.0-1.99	N/A	N/A
	>2.0	5	2,088	>2.0	N/A	N/A
Swan Unit NCDE (Scattered)[g]	0-0.99	N/A	N/A	0-0.99	N/A	N/A
	1.0-1.99	N/A	N/A	1.0-1.99	N/A	N/A
	>2.0	N/A	N/A	>2.0	N/A	N/A

Land Offices and Unit Offices by Recovery Zone[a] (Scattered or Blocked Status)	Open Roads on DNRC Lands in the HCP Project Area[b]					
	Recovery Zone			Non-Recovery Occupied Habitat[f]		
	Density Class mi/mi^2	Parcel Count	Corresponding Acres	Density Class mi/mi^2	Parcel Count	Corresponding Acres
SWLO		**22**	**7,442**		**100**	**41,348**
Anaconda Unit NCDE (Scattered)[g]	0-0.99	N/A	N/A	0-0.99	5	2,949
	1.0-1.99	N/A	N/A	1.0-1.99	2	1,140
	>2.0	N/A	N/A	>2.0	1	620
Clearwater Unit NCDE (Scattered)	0-0.99	6	2,276	0-0.99	64	26,026
	1.0-1.99	0	0	1.0-1.99	8	3,554
	>2.0	9	2,505	>2.0	17	6,410
Hamilton Unit BE (Scattered)[c,g]	0-0.99	N/A	N/A	0-0.99	N/A	N/A
	1.0-1.99	N/A	N/A	1.0-1.99	N/A	N/A
	>2.0	N/A	N/A	>2.0	N/A	N/A
Missoula Unit BE (Scattered)[c, g]	0-0.99	0	0	0-0.99	N/A	N/A
	1.0-1.99	1	182	1.0-1.99	N/A	N/A
	>2.0	0	0	>2.0	N/A	N/A
Missoula Unit NCDE (Scattered)	0-0.99	2	657	0-0.99	3	648
	1.0-1.99	3	1,183	1.0-1.99	0	0
	>2.0	1	638	>2.0	0	0

Land Offices and Unit Offices by Recovery Zone[a] (Scattered or Blocked Status)	Open Roads on DNRC Lands in the HCP Project Area[b]					
	Recovery Zone			Non-Recovery Occupied Habitat[f]		
	Density Class mi/mi^2	Parcel Count	Corresponding Acres	Density Class mi/mi^2	Parcel Count	Corresponding Acres
CLO		**1**	**639**		**76**	**33,645**
Bozeman Unit GYE (Scattered)[g]	0-0.99	N/A	N/A	0-0.99	13	6,186
	1.0-1.99	N/A	N/A	1.0-1.99	3	1,289
	>2.0	N/A	N/A	>2.0	2	657
Conrad Unit NCDE (Scattered)[d]	0-0.99	N/A	N/A	0-0.99	0	0
	1.0-1.99	N/A	N/A	1.0-1.99	0	0
	>2.0	N/A	N/A	>2.0	0	0
Dillon Unit GYE (Scattered)[g]	0-0.99	N/A	N/A	0-0.99	10	4,905
	1.0-1.99	N/A	N/A	1.0-1.99	14	6,695
	>2.0	N/A	N/A	>2.0	16	7,982
Helena Unit NCDE (Scattered)	0-0.99	1	639	0-0.99	15	4,960
	1.0-1.99	0	0	1.0-1.99	2	890
	>2.0	0	0	>2.0	1	80

[a] NCDE= Northern Continental Divide Ecosystem, CYE = Cabinet-Yaak Ecosystem, BE = Bitterroot Ecosystem, GYE = Greater Yellowstone Ecosystem.

[b] HCP Project Area includes all DNRC HCP-covered lands within the Planning Area.

[c] The Bitterroot Recovery Zone (BE) is currently not considered occupied by grizzly bears.

[d] All lands on this unit occur outside of the HCP Project Area.

[f] Non-recovery occupied habitat designation from Wittinger (2002).

[g] N/A = not applicable. Where N/A is listed in the table, there is no such land area in the given unit.

Source: DNRC GIS 2008

TABLE 9-9. NUMBER OF PARCELS AND CORRESPONDING ACREAGE BY TOTAL ROAD DENSITY CLASS USING LINEAR CALCULATION OF MILES PER SQUARE MILE FOR DNRC BLOCKED AND SCATTERED LANDS IN RECOVERY ZONES AND NON-RECOVERY OCCUPIED HABITAT IN THE HCP PROJECT AREA

Land Offices and Unit Offices by Recovery Zone[a] (Scattered or Blocked Status)	Total Roads on DNRC Lands in the HCP Project Area[b]					
	Recovery Zone			Non-Recovery Occupied Habitat[f]		
	Density Class mi/mi^2	Parcel Count	Corresponding Acres	Density Class mi/mi^2	Parcel Count	Corresponding Acres
NWLO		**291**	**146,120**		**111**	**37,765**
Kalispell Unit NCDE (Scattered)	0-0.99	8	1,049	0-0.99	8	1,943
	1.0-1.99	2	904	1.0-1.99	2	665
	>2.0	16	5,126	>2.0	9	3,357
Libby Unit CYE (Scattered)	0-0.99	3	1,283	0-0.99	3	234
	1.0-1.99	2	905	1.0-1.99	5	1,953
	>2.0	2	673	>2.0	20	7,678
Plains Unit CYE (Scattered)	0-0.99	6	524	0-0.99	6	757
	1.0-1.99	2	908	1.0-1.99	0	0
	>2.0	6	1,882	>2.0	6	1,500
Plains Unit NCDE (Scattered)[g]	0-0.99	N/A	N/A	0-0.99	3	942
	1.0-1.99	N/A	N/A	1.0-1.99	1	582
	>2.0	N/A	N/A	>2.0	2	1,282
Stillwater Unit NCDE (Blocked)[e,g]	0-0.99	43	21,835	0-0.99	N/A	N/A
	1.0-1.99	34	19,779	1.0-1.99	N/A	N/A
	>2.0	88	49,059	>2.0	N/A	N/A
Stillwater Unit NCDE (Scattered)	0-0.99	6	748	0-0.99	5	587
	1.0-1.99	1	646	1.0-1.99	4	1,412
	>2.0	5	1,100	>2.0	37	14,873
Swan Unit NCDE (Blocked)[g]	0-0.99	13	7,602	0-0.99	N/A	N/A
	1.0-1.99	4	2,330	1.0-1.99	N/A	N/A
	>2.0	50	29,768	>2.0	N/A	N/A
Swan Unit NCDE (Scattered)[g]	0-0.99	N/A	N/A	0-0.99	N/A	N/A
	1.0-1.99	N/A	N/A	1.0-1.99	N/A	N/A
	>2.0	N/A	N/A	>2.0	N/A	N/A

Land Offices and Unit Offices by Recovery Zone[a] (Scattered or Blocked Status)	Total Roads on DNRC Lands in the HCP Project Area[b]					
	Recovery Zone			Non-Recovery Occupied Habitat[f]		
	Density Class mi/mi^2	Parcel Count	Corresponding Acres	Density Class mi/mi^2	Parcel Count	Corresponding Acres
SWLO		**22**	**7,442**		**100**	**41,348**
Anaconda Unit NCDE (Scattered)[g]	0-0.99	N/A	N/A	0-0.99	3	1,670
	1.0-1.99	N/A	N/A	1.0-1.99	2	1,140
	>2.0	N/A	N/A	>2.0	3	1,900
Clearwater Unit NCDE (Scattered)	0-0.99	4	1,556	0-0.99	33	12,566
	1.0-1.99	0	0	1.0-1.99	4	1,536
	>2.0	11	3,226	>2.0	52	21,888
Hamilton Unit BE (Scattered)[c,g]	0-0.99	N/A	N/A	0-0.99	N/A	N/A
	1.0-1.99	N/A	N/A	1.0-1.99	N/A	N/A
	>2.0	N/A	N/A	>2.0	N/A	N/A
Missoula Unit BE (Scattered)[c, g]	0-0.99	0	0	0-0.99	N/A	N/A
	1.0-1.99	0	0	1.0-1.99	N/A	N/A
	>2.0	1	182	>2.0	N/A	N/A
Missoula Unit NCDE (Scattered)	0-0.99	2	657	0-0.99	3	648
	1.0-1.99	2	627	1.0-1.99	0	0
	>2.0	2	1,195	>2.0	0	0

Land Offices and Unit Offices by Recovery Zone[a] (Scattered or Blocked Status)	Total Roads on DNRC Lands in the HCP Project Area[b]					
	Recovery Zone			Non-Recovery Occupied Habitat[f]		
	Density Class mi/mi^2	Parcel Count	Corresponding Acres	Density Class mi/mi^2	Parcel Count	Corresponding Acres
CLO		**1**	**639**		**76**	**33,645**
Bozeman Unit GYE (Scattered)[g]	0-0.99	N/A	N/A	0-0.99	13	6,186
	1.0-1.99	N/A	N/A	1.0-1.99	3	1,289
	>2.0	N/A	N/A	>2.0	2	657
Conrad Unit NCDE (Scattered)[d]	0-0.99	N/A	N/A	0-0.99	N/A	N/A
	1.0-1.99	N/A	N/A	1.0-1.99	N/A	N/A
	>2.0	N/A	N/A	>2.0	N/A	N/A
Dillon Unit GYE (Scattered)[g]	0-0.99	N/A	N/A	0-0.99	10	4,905
	1.0-1.99	N/A	N/A	1.0-1.99	13	6,055
	>2.0	N/A	N/A	>2.0	17	8,622
Helena Unit NCDE (Scattered)	0-0.99	1	639	0-0.99	13	4,117
	1.0-1.99	0	0	1.0-1.99	1	241
	>2.0	0	0	>2.0	4	1,573

Note: Roads classified as proposed, abandoned, or reclaimed were not included in density calculations

[a] NCDE= Northern Continental Divide Ecosystem, CYE = Cabinet-Yaak Ecosystem, BE = Bitterroot Ecosystem, GYE = Greater Yellowstone Ecosystem.

[b] HCP Project Area includes all DNRC HCP-covered lands within the Planning Area.

[c] The Bitterroot Recovery Zone (BE) is currently not considered occupied by grizzly bears.

[d] All lands on this unit occur outside of the HCP Project Area.

[e] Includes the Coal Creek State Forest, and the blocked portion of the Stillwater State Forest that occurs within the NCDE. N/A = not applicable. There is no NROH in the Stillwater Unit NCDE blocked lands.

[f] Non-recovery occupied habitat designation from Wittinger (2002).

[g] N/A = not applicable. Where N/A is listed in the table, there is no such land area in the given unit.

Source: DNRC GIS 2008

TABLE 9-10. LINEAR MILES OF OPEN, RESTRICTED, AND SEASONALLY RESTRICTED ROAD CLASSES BY DNRC LAND OFFICE AND ADMINISTRATIVE UNIT

Land Offices and Unit Offices by Recovery Zonea (Scattered or Blocked Status)	DNRC Lands in the Planning Area[b]						HCP Project Area[c]					
	Linear Miles of Road in Recovery Zone			Linear Miles of Road in Non-Recovery Occupied Habitat[g]			Linear Miles of Road in Recovery Zone			Linear Miles of Road in Non-Recovery Occupied Habitat[g]		
	Open Roads	Restricted Roads	Seasonally Restricted Roads	Open Roads	Restricted Roads	Seasonally Restricted Roads	Open Roads	Restricted Roads	Seasonally Restricted Roads	Open Roads	Restricted Roads	Seasonally Restricted Roads
NWLO	**213.0**	**427.9**	**11.8**	**162.2**	**122.8**	**3.0**	**205.6**	**426.7**	**11.8**	**122.0**	**102.7**	**3.0**
Kalispell Unit NCDE (Scattered)	20.5	25.5	0.0	23.8	7.1	0.0	17.8	24.8	0.0	16.7	5.0	0.0
Libby Unit CYE (Scattered)	3.5	1.4	0.1	38.0	25.7	1.2	3.5	1.4	0.1	38.0	25.7	1.2
Plains Unit CYE (Scattered)	11.8	0.0	0.0	7.7	0.7	1.8	11.8	0.0	0.0	7.7	0.7	1.8
Plains Unit NCDE (Scattered)[h]	N/A	N/A	N/A	8.7	4.6	0.0	N/A	N/A	N/A	8.4	4.6	0.0
Stillwater Unit NCDE (Blocked)[f]	129.8	229.5	6.4	N/A	N/A	N/A	129.3	229.2	6.4	N/A	N/A	N/A
Stillwater Unit NCDE (Scattered)	3.7	7.6	0.0	83.8	84.8	0.0	1.8	7.5	0.0	51.2	66.7	0.0
Swan Unit NCDE (Blocked)[h]	43.3	164.0	5.3	N/A	N/A	N/A	41.4	163.8	5.3	N/A	N/A	N/A
Swan Unit NCDE (Scattered)[h]	0.3	0.0	0.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SWLO	**36.3**	**5.2**	**0.0**	**89.9**	**144.2**	**0.4**	**21.4**	**5.2**	**0.0**	**51.4**	**136.0**	**0.4**
Anaconda Unit NCDE (Scattered)[h]	N/A	N/A	N/A	8.6	7.9	0.0	N/A	N/A	N/A	7.1	7.9	0.0
Clearwater Unit NCDE (Scattered)	30.8	3.4	0.0	81.3	136.3	0.4	16.8	3.4	0.0	44.3	128.1	0.4
Hamilton Unit BE (Scattered)[d, h]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Missoula Unit BE (Scattered)[d, h]	1.4	0.2	0.0	N/A	N/A	N/A	0.5	0.2	0.0	N/A	N/A	N/A
Missoula Unit NCDE (Scattered)	4.1	1.6	0.0	0.0	0.0	0.0	4.1	1.6	0.0	0.0	0.0	0.0
CLO	**134.1**	**2.7**	**0.0**	**236.5**	**9.5**	**9.8**	**0.2**	**0.0**	**0.0**	**71.4**	**5.6**	**9.8**
Bozeman Unit GYE (Scattered)[h]	0.4	0.0	0.0	38.8	0.8	1.0	N/A	N/A	N/A	11.5	0.0	1.0
Conrad Unit NCDE (Scattered)[e, h]	105.8	0.0	0.0	73.2	0.0	0.0	N/A	N/A	N/A	N/A	N/A	N/A
Dillon Unit GYE (Scattered)[h]	N/A	N/A	N/A	94.6	3.3	8.8	N/A	N/A	N/A	55.3	0.2	8.8
Helena Unit NCDE (Scattered)	28.0	2.7	0.0	29.8	5.4	0.0	0.2	0.0	0.0	4.6	5.4	0.0

Note: Roads classified as proposed, abandoned, or reclaimed were not included in density calculations.

[a] NCDE= Northern Continental Divide Ecosystem, CYE = Cabinet-Yaak Ecosystem, BE = Bitterroot Ecosystem, GYE = Greater Yellowstone Ecosystem.

[b] Planning Area includes all of NWLO, SWLO, and CLO.

[c] HCP Project Area includes all DNRC HCP-covered lands within the Planning Area.

[d] The Bitterroot Recovery Zone (BE) is currently not considered occupied by grizzly bears.

[e] All lands on this unit occur outside of the HCP Project Area.

[f] Includes the Coal Creek State Forest, and the blocked portion of the Stillwater State Forest that occurs within the NCDE. N/A = not applicable. There is no NROH in the Stillwater Unit NCDE blocked lands.

[g] Non-recovery occupied habitat designation from Wittinger (2002).
[h] N/A = not applicable. Where N/A is listed in the table, there is no such land area in the given unit.
Source: DNRC GIS 2008

TABLE 9-11. LINEAR MILES OF OPEN, RESTRICTED, AND SEASONALLY RESTRICTED ROAD CLASSES FOR RECOVERY ZONES AND NON-RECOVERY OCCUPIED HABITAT ON DNRC LANDS IN THE HCP PLANNING AREA AND PROJECT AREA

	Linear Miles of Road					
	DNRC Lands in Planning Area[a]			HCP Project Area[b]		
	Open Roads	Restricted Roads	Seasonally Restricted Roads	Open Roads	Restricted Roads	Seasonally Restricted Roads
Recovery Zone	383.4	435.9	11.8	227.2	431.9	11.8
Non-Recovery Occupied Habitat[c]	488.5	276.5	13.2	244.8	244.3	13.2
Total	***871.8***	***712.3***	***24.9***	***472.0***	***676.2***	***24.9***

a Planning Area includes all of NWLO, SWLO, and CLO.
b HCP Project Area includes all DNRC HCP-covered lands within the Planning Area.
c Non-recovery occupied habitat designation from Wittinger (2002).
Source: DNRC GIS 2008

TABLE 9-12. DNRC 1996 BASELINE AND 2004 ROAD DATA MOVING WINDOWS ESTIMATES (AKE 1994) OF ORD, TRD, AND SEC FOR DNRC HCP LANDS ON STILLWATER STATE FOREST BLOCKED LANDS BY BMU AND BMU SUBUNIT

Administrative Unit, BMU, BMU Subunit	DNRC 1996[a]			DNRC 2004[a]			Percent of Subunit within HCP Project Area
	ORD[b]	TRD[c]	SEC[d]	ORD[b]	TRD[c]	SEC[d]	
Stillwater Unit	41.0	49.7	40.6	38.3	49.7	43.9	
Lower North Fork Flathead BMU	*0.0*	*0.0*	*79.5*	*0.0*	*0.0*	*79.5*	
Werner Creek subunit	0.0	0.0	79.5	0.0	0.0	79.5	1.3
Murphy Lake BMU	*0.0*	*0.0*	*92.5*	*0.0*	*0.0*	*92.5*	
Krinklehorn subunit	0.0	0.0	92.5	0.0	0.0	92.5	0.7
Stillwater River BMU	*43.7*	*52.0*	*39.0*	*40.5*	*52.0*	*43.1*	
Lazy Creek subunit	63.2	67.0	19.0	63.1	67.0	19.0	41.6
Stryker subunit	40.6	36.3	49.0	35.4	36.3	49.4	80.6
Upper Whitefish subunit	37.2	63.3	37.6	34.7	63.3	48.2	84.0
Upper North Fork Flathead BMU	*29.9*	*41.1*	*46.1*	*29.9*	*41.1*	*46.1*	
Coal and South Coal subunit	0.0	0.0	99.1	0.0	0.0	99.1	1.6
Hay Creek subunit	0.0	48.4	48.4	0.0	48.4	48.4	5.4
State Coal Cyclone subunit	35.6	41.2	44.1	35.6	41.2	44.1	42.8

Note: Roads classified as proposed, abandoned, or reclaimed were not included in density calculations. Unlike other moving windows analyses, this table includes roads only within the DNRC land ownership boundary, instead of including additional areas within 0.5 miles of DNRC lands, because the compliance standard related to this table only addresses actual DNRC lands.

a Percentage for DNRC lands within a subunit.

b ORD = Percentage of subunit by ownership that contains greater than 1mi/square mi. of open road.

c TRD = Percentage of subunit by ownership that contains greater than 2mi/square mi. of total road.

d SEC = Percentage of subunit by ownership in secure habitat defined as the area 0.5 kilometers from an open or restricted road.

Source: DNRC GIS 2008

TABLE 9-13. ACREAGE OF GRIZZLY BEAR DENNING HABITAT ON DNRC BLOCKED AND SCATTERED LANDS WITHIN THE PLANNING AREA AND HCP PROJECT AREA, FOR RECOVERY ZONES AND NON-RECOVERY OCCUPIED HABITAT, BY LAND OFFICE

Land Offices and Unit Offices by Recovery Zone[c] (Scattered or Blocked Status)	Denning Habitat in the Planning Area (all ownerships)[A]		Denning Habitat on DNRC Lands in the Planning Area[A]		Denning Habitat in the HCP Project Area[B]	
	Recovery Zone	Non-Recovery Occupied Habitat[D]	Recovery Zone	Non-Recovery Occupied Habitat[D]	Recovery Zone	Non-Recovery Occupied Habitat[D]
NWLO	**536,696**	**2,895**	**5,764**	**52**	**5,764**	**52**
Kalispell Unit NCDE (Scattered)	33,454	1,288	0	0	0	0
Libby Unit CYE (Scattered)	19,677	196	0	0	0	0
Plains Unit CYE (Scattered)	13,244	59	0	0	0	0
Plains Unit NCDE (Scattered)[e]	N/A	1,290	N/A	52	N/A	52
Stillwater Unit NCDE (Blocked)[e, g]	4,498	N/A	4,498	N/A	4,498	N/A
Stillwater Unit NCDE (Scattered)	151,981	62	0	0	0	0
Swan Unit NCDE (Blocked)[e]	1,266	N/A	1,266	N/A	1,266	N/A
Swan Unit NCDE (Scattered)[e]	312,577	N/A	0	N/A	N/A	N/A
SWLO	**260,346**	**22,979**	**99**	**421**	**99**	**333**
Anaconda Unit NCDE (Scattered)[e]	N/A	9,604	N/A	87	N/A	N/A
Clearwater Unit NCDE (Scattered)	103,606	8,332	28	22	28	20
Hamilton Unit BE (Scattered)[e, f]	137,928	N/A	N/A	N/A	N/A	N/A
Missoula Unit BE (Scattered)[e, ,f]	8,824	NA	0	N/A	0	N/A
Missoula Unit NCDE (Scattered)	9,988	5,043	71	312	71	312
CLO	**589,744**	**435,856**	**623**	**3,945**	**0**	**2,604**
Bozeman Unit GYE (Scattered)	249,457	348,843	0	1,850	N/A	1,566
Conrad Unit NCDE (Scattered)[e]	239,031	0	322	0	N/A	N/A
Dillon Unit GYE (Scattered)[e]	N/A	81,456	N/A	1,753	N/A	696
Helena Unit NCDE (Scattered)	101,256	5,557	301	342	0	342
Total	**1,386,786**	**461,730**	**6,487**	**4,418**	**5,863**	**2,989**

* Table totals may not add up, due to rounding.

[a] Planning Area includes all of NWLO, SWLO, and CLO. For columns where acreages portrayed are for "all ownerships", the designation of scattered vs. blocked lands is not applicable and the row identifier as scattered vs. blocked should be ignored.

[b] HCP Project Area includes all DNRC HCP-covered lands within the Planning Area.

[c] NCDE= Northern Continental Divide Ecosystem, CYE = Cabinet-Yaak Ecosystem, BE = Bitterroot Ecosystem, GYE = Greater Yellowstone Ecosystem.

[d] Non-recovery occupied habitat designation from Wittinger (2002).

[e] N/A = not applicable. Where N/A is listed in the table, there is no such land area in the given unit.
[f] The Bitterroot Recovery Zone (BE) is currently not considered occupied by grizzly bears.
[g] Includes the Coal Creek State Forest, and the blocked portion of the Stillwater State Forest that occurs within the NCDE.

TABLE 9-14. ACREAGE OF GRIZZLY BEAR SPRING HABITAT IN THE PLANNING AREA AND HCP PROJECT AREA, FOR RECOVERY ZONES AND NON-RECOVERY OCCUPIED HABITAT, BY LAND OFFICE AND ADMINISTRATIVE UNIT FOR BLOCKED AND SCATTERED LANDS

	Spring Habitat in the Planning Area (all ownerships)[a]		Spring Habitat on DNRC Lands in the Planning Area[a]		Spring Habitat in the HCP Project Area[d]	
Land Offices and Unit Offices by Recovery Zone[b] (Scattered or Blocked Status)	**Recovery Zone**	**Non-Recovery Occupied Habitat[c]**	**Recovery Zone**	**Non-Recovery Occupied Habitat[c]**	**Recovery Zone**	**Non-Recovery Occupied Habitat[c]**
NWLO	**1,978,549**	**1,271,156**	**97,478**	**46,953**	**95,198**	**35,225**
Kalispell Unit NCDE (Scattered)	107,640	207,760	7,106	6,375	6,580	4,512
Libby Unit CYE (Scattered)	566,262	449,752	2,832	9,904	2,832	9,779
Plains Unit CYE (Scattered)	250,149	249,584	3,193	2,311	3,011	2,257
Plains Unit NCDE (Scattered)[g]	N/A	25,191	N/A	1,807	N/A	N/A
Stillwater Unit NCDE (Blocked)[e, g]	48,649	53	48,649	53	48,571	48
Stillwater Unit NCDE (Scattered)	467,628	338,817	3,493	26,502	2,467	16,822
Swan Unit NCDE (Blocked)[g]	31,871	N/A	31,871	N/A	31,738	N/A
Swan Unit NCDE (Scattered)[g]	506,351	N/A	335	N/A	N/A	N/A
SWLO	**67,945**	**372,734**	**2,756**	**37,796**	**2,094**	**28,455**
Anaconda Unit NCDE (Scattered)[g]	N/A	8,126	0	0	0	0
Clearwater Unit NCDE (Scattered)	32,205	363,038	2,324	36,088	1,821	28,306
Hamilton Unit BE (Scattered)[f, g]	5,344	N/A	N/A	N/A	N/A	N/A
Missoula Unit BE (Scattered)[f, g]	25,833	N/A	340	N/A	181	N/A
Missoula Unit NCDE (Scattered)	4,564	1,569	92	1,708	92	149
CLO	**381,517**	**786,427**	**30,604**	**66,556**	**4**	**91**
Bozeman Unit GYE (Scattered)	N/A	29,857	0	0	N/A	0
Conrad Unit NCDE (Scattered)[g]	310,793	596,481	20,164	46,841	N/A	N/A
Dillon Unit GYE (Scattered)[g]	N/A	0	N/A	0	N/A	0
Helena Unit NCDE (Scattered)	70,723	160,089	10,439	19,715	4	91
Total	**2,428,010**	**2,430,316**	**130,838**	**151,305**	**97,296**	**63,772**

* Table totals may not add up, due to rounding.

[a] Planning Area includes all of NWLO, SWLO, and CLO. For columns where acreages portrayed are for "all ownerships", the designation of scattered vs. blocked lands is not applicable and the row identifier as scattered vs. blocked should be ignored. "Spring habitat" is defined as all areas below 5,200 ft for the Swan Unit and all areas below 4,900 feet for other lands.

[b] NCDE= Northern Continental Divide Ecosystem, CYE = Cabinet-Yaak Ecosystem, BE = Bitterroot Ecosystem, GYE = Greater Yellowstone Ecosystem.

[c] Non-recovery occupied habitat designation from Wittinger (2002).

[d] HCP Project Area includes all DNRC HCP-covered lands within the Planning Area.

[e] Includes the Coal Creek State Forest and majority of the Stillwater State Forest.

[f] The Bitterroot Recovery Zone (BE) is currently not considered occupied by grizzly bears.

[g] N/A = not applicable. Where N/A is listed in the table, there is no such land area in the given unit.

Source: DNRC GIS 2008

TABLE 9-15. ACREAGES OF EXISTING CANADA LYNX HABITAT AS DEFINED IN THE DNRC FOREST MANAGEMENT RULES DEFINITIONS ON DNRC LANDS IN THE PLANNING AREA AND HCP PROJECT AREA BY NWLO ADMINISTRATIVE UNIT

NWLO DNRC Lands in Planning Area[a] (%)												NWLO HCP Lands[b] (%)									
KAL		LIB		PLNS		STW		SWN		Total		KAL		LIB		PLNS		STW		SWN		To
Denning[f]																						
3,431	(22.6)	250	(7.6)	2,308	(18.8)	22,762	(25.1)	4,455	(17.4)	**33,205**	**3,064**	(22.4)	250	(7.6)	1,839	(16.1)	22,183	(25.4)	4,455	(17.6)	**31,**
Denning/Mature Foraging[f]																					
1,998	(13.2)	213	(6.5)	1,562	(12.7)	9,972	(11.0)	3,926	(15.3)	**17,673**	**1,858**	(13.6)	213	(6.5)	1,441	(12.6)	9,789	(11.2)	3,926	(15.5)	**17,**
Denning/Young Foraging[f]																					
0	(0.0)	0	(0.0)	0	(0.0)	16	(0.0)	0	(0.0)	**16**	**0**	(0.0)	0	(0.0)	0	(0.0)	16	(0.0)	0	(0.0)	**1**
Mature Foraging[f]																					
1,864	(12.3)	883	(26.9)	2,463	(20.0)	11,022	(12.2)	4,105	(16.0)	**20,338**	**1,650**	(12.1)	883	(26.9)	2,391	(20.9)	10,413	(11.9)	4,088	(16.1)	**19,**
Other Habitat[f]																					
6,346	(41.9)	1,553	(47.2)	5,452	(44.3)	31,556	(34.9)	11,074	(43.2)	**55,981**	**5,645**	(41.3)	1,553	(47.2)	5,251	(45.9)	30,097	(34.4)	10,796	(42.6)	**53,**
Young Foraging[f]																					
100	(0.7)	139	(4.2)	0	(0.0)	695	(0.8)	54	(0.2)	**987**	**100**	(0.7)	139	(4.2)	0	(0.0)	637	(0.7)	54	(0.2)	**9**
Suitable Habitat Subtotal[c,f]																					
13,739	(90.7)	3,039	(92.4)	11,786	(95.8)	76,022	(84.0)	23,613	(92.1)	**128,199**	**12,318**	(90.2)	3,039	(92.4)	10,922	(95.4)	73,135	(83.6)	23,319	(92.0)	**122**
Temporary Non-Suitable Habitat[f]																					
1,414	(9.3)	249	(7.6)	521	(4.2)	14,484	(16.0)	2,036	(7.9)	**18,705**	**1,345**	(9.8)	249	(7.6)	521	(4.6)	14,356	(16.4)	2,036	(8.0)	**18,**
Total Potential Lynx Habitat[d,g]																					
15,154	(25.3)	3,288	(10.5)	12,307	(19.2)	90,506	(74.9)	25,649	(63.9)	**146,904**	**13,663**	(32.8)	3,288	(11.6)	11,443	(21.4)	87,490	(79.5)	25,355	(63.9)	**141**
Non Habitat[g]																					
44,781	(74.7)	27,939	(89.5)	51,796	(80.8)	30,317	(25.1)	14,519	(36.1)	**169,352**	**27,991**	(67.2)	25,164	(88.4)	42,113	(78.6)	22,548	(20.5)	14,345	(36.1)	**132**
Total Acres[e]																					
59,935	(100.0)	31,227	(100.0)	64,103	(100.0)	120,824	(100.0)	40,168	(100.0)	**316,256**	**41,654**	(100.0)	28,452	(100.0)	53,556	(100.0)	110,039	(100.0)	39,699	(100.0)	**273**

[a] Land Offices in the Planning Area inlclude Northwest Land Office (NWLO), Southwest Land Office (SWLO), and Central Land Office (CLO). Administrative units in the Northwest Land Office include Kalispell (KAL), Libby (LIB), Plains (PLNS), Stillwater (STW), and Swan (SWN).

[b] HCP project prea includes all DNRC HCP-covered lands within the Planning Area.

[c] The suitable habitat subtotal is the sum of denning habitat, mature foraging habitat, young foraging habitat and other suitable habitat, which are all presumed to currently provide habitat.

[d] Total potential lynx habitat is the sum of suitable habitat and temporary non-suitable habitat acres. This category represents all lands potentially supporting lynx preferred climax vegetation types over time regardless of their current structural condition.

[e] Total acres is the sum of total potential lynx habitat and non-habitat.

[f] Percentages for these habitat classes describe habitat amounts proportional to total potential lynx habitat.

[g] Percentages for these classes describe amounts proportional to total acres. Source: DNRC GIS 2008

TABLE 9-16. ACREAGES OF EXISTING CANADA LYNX HABITAT AS DEFINED IN THE DNRC FOREST MANAGEMENT RULES DEFINITIONS ON DNRC LANDS IN THE PLANNING AREA AND HCP PROJECT AREA BY SWLO ADMINISTRATIVE UNIT

SWLO DNRC Lands in the Planning Area[a] (%)									SWLO HCP Lands[b] (%)								
ANA		CLW		HAM		MSLA		Total	ANA		CLW		HAM		MSLA		Total
Denning[f]																	
16	(0.4)	1,365	(12.5)	107	(9.1)	721	(5.7)	**2,209**	16	(0.4)	1,017	(11.4)	107	(9.1)	689	(1.3)	**6**
Denning/Mature Foraging[f]																	
17	(0.4)	1,137	(10.4)	9	(0.8)	1,475	(11.7)	**2,637**	17	(0.4)	809	(9.0)	9	(0.8)	1,032	(1.9)	**9**
Denning/Young Foraging[f]																	
0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	**0**	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	**0**
Mature Foraging[f]																	
677	(16.5)	1,696	(15.5)	0	(0.0)	3,538	(28.1)	**5,911**	677	(16.5)	1,514	(16.9)	0	(0.0)	3,264	(6.2)	**28**
Other Habitat[f]																	
3,077	(74.9)	5,938	(54.4)	187	(16.0)	5,678	(45.1)	**14,879**	3,077	(74.9)	4,933	(55.1)	187	(16.0)	5,312	(10.0)	**46**
Young Foraging[f]																	
14	(0.3)	64	(0.6)	0	(0.0)	0	(0.0)	**78**	14	(0.3)	0	(0.0)	0	(0.0)	0	(0.0)	**0**
Suitable Habitat Subtotal[c,f]																	
3,801	(92.5)	10,199	(93.5)	302	(25.8)	11,412	(90.6)	**25,714**	3,801	(92.5)	8,274	(92.5)	302	(25.8)	10,297	(19.5)	**90**
Temporary Non-Suitable Habitat[f]																	
310	(7.5)	709	(6.5)	867	(74.2)	1,178	(9.4)	**3,064**	310	(7.5)	675	(7.5)	867	(74.2)	1,178	(2.2)	**10**
Total Potential Lynx Habitat[d,g]																	
4,110	(5.0)	10,908	(20.0)	1,169	(4.0)	12,591	(18.2)	**28,778**	4,110	(9.4)	8,949	(20.3)	1,169	(5.6)	11,475	(21.7)	**25,704**
Non Habitat[g]																	
77,532	(95.0)	43,671	(80.0)	28,353	(96.0)	56,409	(81.8)	**205,966**	39,825	(90.6)	35,202	(79.7)	19,744	(94.4)	41,453	(78.3)	**136,224**
Total Acres[e]																	
81,642	*(100.0)*	*54,579*	*(100.0)*	*29,523*	*(100.0)*	*69,000*	*(100.0)*	***234,744***	*43,935*	*(100.0)*	*44,150*	*(100.0)*	*20,913*	*(100.0)*	*52,928*	*(100.0)*	***161,927***

[a] Land offices in the Planning Area inlclude Northwest Land Office (NWLO), Southwest Land Office (SWLO), and Central Land Office (CLO). Administrative units in the Southwest Land Office include Anaconda (ANA), Clearwater (CLW), Hamilton (HAM), and Missoula (MSLA).

b HCP Project Area includes all DNRC HCP-covered lands within the Planning Area.

c The suitable habitat subtotal is the sum of denning habitat, mature foraging habitat, young foraging habitat and other suitable habitat, which are all presumed to currently provide habitat.

d Total potential lynx habitat is the sum of suitable habitat and temporary non-suitable habitat acres. This category represents all lands potentially supporting lynx preferred climax vegetation types over time regardless of their current structural condition.

TABLE 9-17. ACREAGES OF EXISTING CANADA LYNX HABITAT AS DEFINED IN THE DNRC FOREST MANAGEMENT RULES DEFINITIONS ON DNRC LANDS IN THE PLANNING AREA AND HCP PROJECT AREA BY CLO ADMINISTRATIVE UNIT

CLO DNRC Lands[a] (%)									CLO HCP Lands[b] (%)								
BOZ		CON		DIL		HEL		Total	BOZ		CON		DIL		HEL		Total
Denning[f]																	
4,320	(38.0)	53	(8.8)	8,474	(41.7)	4,616	(43.0)	17,463	3,195	(37.5)	0	(0.0)	7,246	(41.2)	2,732	(44.8)	13,172
Denning/Mature Foraging[f]																	
2,971	(26.1)	0	(0.0)	4,759	(23.4)	1,461	(13.6)	9,191	2,473	(29.0)	0	(0.0)	3,897	(22.1)	1,141	(18.7)	7,511
Denning/Young Foraging[f]																	
0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0
Mature Foraging[f]																	
0	(0.0)	0	(0.0)	482	(2.4)	14	(0.1)	496	0	(0.0)	0	(0.0)	366	(2.1)	0	(0.0)	366
Other Habitat[f]																	
980	(8.6)	552	(91.2)	2,388	(11.7)	1,627	(15.2)	5,547	676	(7.9)	0	(0.0)	2,189	(12.4)	678	(11.1)	3,542
Young Foraging[f]																	
0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0
Suitable Habitat Subtotal[c,f]																	
8,270	(72.7)	605	(100.0)	16,103	(79.2)	7,718	(71.9)	32,697	6,343	(74.4)	0	(0.0)	13,698	(77.8)	4,551	(74.6)	24,592
Temporary Non-Suitable Habitat[f]																	
3,111	(27.3)	0	(0.0)	4,227	(20.8)	3,011	(28.1)	10,348	2,179	(25.6)	0	(0.0)	3,903	(22.2)	1,546	(25.4)	7,629
Total Potential Lynx Habitat[d,g]																	
11,381	(9.0)	605	(0.2)	20,330	(4.7)	10,729	(3.1)	43,045	8,523	(51.7)	0	(0.0)	17,601	(24.9)	6,097	(23.4)	32,220
Non Habitat[g]																	
114,541	(91.0)	356,219	(99.8)	409,897	(95.3)	338,828	(96.9)	1,219,485	7,960	(48.3)	0	(0.0)	52,992	(75.1)	20,009	(76.6)	80,961
Total Acres[e]																	
125,922	*(100.0)*	*356,824*	*(100.0)*	*430,227*	*(100.0)*	*349,557*	*(100.0)*	*1,262,530*	*16,483*	*(100.0)*	*0*	*(0.0)*	*70,593*	*(100.0)*	*26,106*	*(100.0)*	*113,182*

a Land offices in the Planning Area inlclude Northwest Land Office (NWLO), Southwest Land Office (SWLO), and Central Land Office (CLO). Administrative units in the Central Land Office include Bozeman (BOZ), Conrad (CON), Dillon (DIL), and Helena (HEL).

b HCP Project Area includes all DNRC HCP-covered lands within the Planning Area.

c The suitable habitat subtotal is the sum of denning habitat, mature foraging habitat, young foraging habitat and other suitable habitat, which are all presumed to currently provide habitat.

d Total potential lynx habitat is the sum of suitable habitat and temporary non-suitable habitat acres. This category represents all lands potentially supporting lynx preferred climax vegetation types over time regardless of their current structural condition.

e Total acres is the sum of total potential lynx habitat and non-habitat.

f Percentages for these habitat classes describe habitat amounts proportional to total potential lynx habitat.

g Percentages for these classes describe amounts proportional to total acres.

Source: DNRC GIS 2008

TABLE 9-18. ACREAGES OF EXISTING CANADA LYNX HABITAT AS DEFINED IN THE DNRC FOREST MANAGEMENT RULES DEFINITIONS ON BLOCKED DNRC LANDS WITHIN GRIZZLY BEAR MANAGEMENT UNIT SUBUNITS CONTAINING GREATER THAN 1,000 ACRES OF DNRC OWNERSHIP ON THE STILLWATER UNIT AND SWAN UNIT

	Habitat Class										
ADMINISTRATIVE UNIT, BMU Subunit	Denning Habitat	Denning/Mature Foraging Habitat	Denning/Young Foraging Habitat	Mature Foraging Habitat	Young Foraging Habitat	Other Suitable Habitat	Suitable Habitat Subtotal[a]	Temporary Non-Suitable Habitat	Total Potential Lynx Habitat[b]	Non Habitat	Total Acres[c]
Stillwater Unit	17,509	8,443	16	9,360	637	26,813	62,778	13,316	76,094	13,534	89,627
Hay Creek	241	0	0	116	153	950	1,459	0	1,459	347	1,807
Lazy Creek	1,329	2,258	0	3,398	0	3,771	10,756	1,853	12,609	1,833	14,443
State Coal Cyclone	2,029	437	0	656	183	3,642	6,947	3,883	10,830	2,590	13,420
Stryker	8,179	3,130	0	887	210	7,900	20,307	4,894	25,201	7,722	32,923
Upper Whitefish	5,731	2,618	16	4,303	90	10,550	23,308	2,685	25,994	1,042	27,035
Swan Unit	4,455	3,926	0	4,088	54	10,796	23,319	2,036	25,355	14,479	39,833
Goat Creek	30	34	0	288	0	403	755	25	779	5,249	6,028
Lion Creek	0	0	0	29	0	203	232	0	232	2,835	3,067
Piper Creek	51	45	0	0	0	79	176	0	176	1	177
Porcupine Woodward	1,714	1,300	0	1,862	0	4,459	9,334	561	9,895	2,342	12,237
South Fork Lost Soup	2,659	2,548	0	1,909	54	5,652	12,822	1,450	14,272	4,051	18,324
TOTAL	***21,964***	***12,370***	***16***	***13,447***	***691***	***37,609***	***86,096***	***15,352***	***101,448***	***28,013***	***129,461***

a The suitable habitat subtotal is the sum of winter foraging habitat, young foraging habitat and other suitable habitat, which are all presumed to currently provide habitat.

b Total potential lynx habitat is the sum of suitable habitat and temporary non-suitable habitat acres. This category represents all lands potentially supporting lynx preferred climax vegetation types over time regardless of their current structural condition.

c Total acres is the sum of total potential lynx habitat and non-habitat.

Source: DNRC GIS 2008

TABLE 9-19. ACREAGES OF EXISTING CANADA LYNX HABITAT, USING HCP LYNX HABITAT DEFINITIONS, ON DNRC LANDS BY LAND OFFICE IN THE PLANNING AREA AND HCP PROJECT AREA

	DNRC Lands in the Planning Area[a] (%)							HCP Project Area[b] (%)						
Habitat Class	**NWLO**		**SWLO**		**CLO**		**Total**	**NWLO**		**SWLO**		**CLO**		**Total**
Winter Foraging Habitat[f]	131,076	(65.3)	15,610	(38.8)	NA	(0.0)	**146,686**	120,146	(65.0)	12,890	(36.2)	NA	(0.0)	**133,036**
Summer Foraging Habitat[f]	18,431	(9.2)	3,838	(9.5)	NA	(0.0)	**22,269**	17,665	(9.6)	3,635	(10.2)	NA	(0.0)	**21,300**
Other Suitable Habitat[f]	23,985	(12.0)	12,546	(31.2)	43,043	(74.1)	**79,574**	21,176	(11.5)	11,165	(31.4)	27,928	(75.4)	**60,269**
Suitable Habitat Subtotal[c,f]	173,492	(86.5)	31,994	(79.5)	43,043	(74.1)	**248,529**	158,987	(86.1)	27,690	(77.8)	27,928	(75.4)	**214,605**
Temporary Non-Suitable Habitat[f]	27,111	(13.5)	8,266	(20.5)	15,038	(25.9)	**50,415**	25,721	(13.9)	7,896	(22.2)	9,111	(24.6)	**42,728**
Total Potential Lynx Habitat[d,g]	200,603	(63.4)	40,260	(17.2)	58,081	(4.6)	**298,944**	184,708	(67.6)	35,586	(22.0)	37,039	(32.7)	**257,333**
Non Habitat[g]	115,653	(36.6)	194,484	(82.8)	1,204,455	(95.4)	**1,514,592**	88,693	(32.4)	126,341	(78.0)	76,143	(67.3)	**291,177**
Total Acres[e]	*316,256*	*(100.0)*	*234,744*	*(100.0)*	*1,262,536*	*(100.0)*	***1,813,536***	*273,401*	*(100.0)*	*161,927*	*(100.0)*	*113,182*	*(100.0)*	**548,510**

a Planning Area includes all of NWLO, SWLO, and CLO.

b HCP Project Area includes all DNRC HCP-covered lands within the Planning Area.

c The suitable habitat subtotal is the sum of winter foraging habitat, summer foraging habitat and other suitable habitat, which are all presumed to currently provide habitat.

d Total potential lynx habitat is the sum of suitable habitat and temporary non-suitable habitat acres. This category represents all lands potentially supporting lynx preferred climax vegetation types over time regardless of their current structural condition.

e Total acres is the sum of total potential lynx habitat and non-habitat.

f Percentages for these habitat classes describe habitat amounts proportional to total potential lynx habitat.

g Percentages for these classes describe amounts proportional to total acres.

Source: DNRC GIS 2010

TABLE 9-20. ACREAGES OF EXISTING CANADA LYNX HABITAT, USING HCP LYNX HABITAT DEFINITIONS, FOR ALL DNRC LANDS AND ON HCP PROJECT AREA LANDS WITHIN THE NWLO, BY ADMINISTRATIVE UNIT

	NWLO Lands in the Planning Area[a] (%)										NWLO Lands in the HCP Project Areab (%)									
	KAL		LIB		PLNS		STW		SWN	Total	KAL		LIB		PLNS		STW		SWN	Total
Winter Foraging Habitat[f]																				
	19,471	(72.8)	5,838	(56.5)	12,312	(64.0)	69,625	(64.9)	23,831 (64.4)	**131,077**	15,857	(71.9)	5,388	(58.2)	11,180	(62.8)	63,924	(64.6)	23,797 (64.9)	120,146
Summer Foraging Habitat[f]																				
	2,049	(7.7)	555	(5.4)	603	(3.1)	12,628	(11.8)	2,597 (7.0)	**18,432**	1,697	(7.7)	547	(5.9)	552	(3.1)	12,282	(12.4)	2,588 (7.1)	17,666
Other Suitable Habitat[f]																				
	4,291	(16.1)	2,254	(21.8)	5,204	(27.1)	8,277	(7.7)	3,959 (10.7)	**23,985**	3,688	(16.7)	1,803	(19.5)	4,990	(28.0)	7,063	(7.1)	3,632 (9.9)	21,176
Suitable Habitat Subtotal[c,f]																				
	25,811	(96.6)	8,647	(83.8)	18,119	(94.2)	90,530	(84.4)	30,387 (82.1)	**173,494**	21,242	(96.3)	7,738	(83.6)	16,722	(93.9)	83,269	(84.2)	30,017 (81.9)	158,988
Temporary Non-Suitable Habitat[f]																				
	921	(3.4)	1,677	(16.2)	1,108	(5.8)	16,769	(15.6)	6,636 (17.9)	**27,111**	809	(3.7)	1,519	(16.4)	1,087	(6.1)	15,670	(15.8)	6,636 (18.1)	25,721
Total Potential Lynx Habitat[d,g]																				
	26,732	(44.6)	10,324	(33.1)	19,227	(30.0)	107,299	(88.8)	37,023 (92.2)	**200,605**	22,051	(52.9)	9,257	(32.5)	17,809	(33.3)	98,939	(89.9)	36,653 (92.3)	184,709
Non Habitat[g]																				
	33,203	(55.4)	20,903	(66.9)	44,876	(70.0)	13,525	(11.2)	3,145 (7.8)	**115,652**	19,603	(47.1)	19,195	(67.5)	35,747	(66.7)	11,100	(10.1)	3,046 (7.7)	88,691
Total Acres[e]																				
	59,935	***(100.0)***	***31,227***	***(100.0)***	***64,103***	***(100.0)***	***120,824***	***(100.0)***	***40,168 (100.0)***	***316,256***	***41,654***	***(100.0)***	***28,452***	***(100.0)***	***53,556***	***(100.0)***	***110,039***	***(100.0)***	***39,699 (100.0)***	**273,401**

a Land offices in the Planning Area include Northwest Land Office (NWLO), Southwest Land Office (SWLO), and Central Land Office (CLO). Administrative units in the Northwest Land Office include Kalispell (KAL), Libby (LIB), Plains (PLNS), Stillwater (STW), and Swan (SWN).

b HCP Project Area includes all DNRC HCP-covered lands within the Planning Area.

c The suitable habitat subtotal is the sum of winter foraging habitat, summer foraging habitat and other suitable habitat, which are all presumed to currently provide habitat.

d Total potential lynx habitat is the sum of suitable habitat and temporary non-suitable habitat acres. This category represents all lands potentially supporting lynx preferred climax vegetation types over time regardless of their current structural condition.

e Total acres is the sum of total potential lynx habitat and non-habitat.

f Percentages for these habitat classes describe habitat amounts proportional to total potential lynx habitat.

g Percentages for these classes describe amounts proportional to total acres.

Source: DNRC GIS 2010

TABLE 9-21. ACREAGES OF EXISTING CANADA LYNX HABITAT, USING HCP LYNX HABITAT DEFINITIONS, FOR ALL DNRC LANDS AND ON HCP PROJECT AREA LANDS WITHIN THE SWLO, BY ADMINISTRATIVE UNIT

Habitat Class	SWLO Lands in the Planning Area[a] (%)								Total	SWLO Lands in the HCP Project Area[b] (%)								Total
	ANA		CLW		HAM		MSLA			ANA		CLW		HAM		MSLA		
Winter Foraging Habitat[f]	1,616	(38.7)	7,866	(50.9)	333	(7.1)	5,793	(36.3)	**15,608**	1,611	(38.7)	6,283	(47.3)	333	(7.3)	4,663	(34.3)	**12,890**
Summer Foraging Habitat[f]	1,538	(36.8)	817	(5.3)	181	(3.9)	1,300	(8.1)	**3,836**	1,538	(37.0)	817	(6.1)	181	(4.0)	1,099	(8.1)	**3,635**
Other Suitable Habitat[f]	751	(18.0)	5,462	(35.4)	747	(16.0)	5,593	(35.0)	**12,553**	736	(17.7)	4,924	(37.1)	717	(15.7)	4,787	(35.2)	**11,164**
Suitable Habitat Subtotal[c,f]	3,905	(93.4)	14,145	(91.6)	1,261	(27.0)	12,686	(79.5)	**31,997**	3,885	(93.4)	12,024	(90.5)	1,231	(27.0)	10,549	(77.7)	**27,689**
Temporary Non-Suitable Habitat[f]	274	(6.6)	1,302	(8.4)	3,415	(73.0)	3,272	(20.5)	**8,263**	274	(6.6)	1,262	(9.5)	3,325	(73.0)	3,035	(22.3)	**7,896**
Total Potential Lynx Habitat[d,g]	4,179	(5.1)	15,447	(28.3)	4,676	(15.8)	15,958	(23.1)	**40,260**	4,159	(9.5)	13,286	(30.1)	4,556	(21.8)	13,584	(25.7)	**35,585**
Non Habitat[g]	77,463	(94.9)	39,132	(71.7)	24,847	(84.2)	53,042	(76.9)	**194,484**	39,776	(90.5)	30,864	(69.9)	16,357	(78.2)	39,344	(74.3)	**126,341**
Total Acres[e]	***81,642***	***(100.0)***	***54,579***	***(100.0)***	***29,523***	***(100.0)***	***69,000***	***(100.0)***	***234,744***	***43,935***	***(100.0)***	***44,150***	***(100.0)***	***20,913***	***(100.0)***	***52,928***	***(100.0)***	***161,927***

a Land offices in the Planning Area include Northwest Land Office (NWLO), Southwest Land Office (SWLO), and Central Land Office (CLO). Administrative units in the Southwestern Land Office include Anaconda (ANA), Clearwater (CLW), Hamilton (HAM), and MSLA (MSLA).

b HCP Project Area includes all DNRC HCP-covered lands within the Planning Area.

c The suitable habitat subtotal is the sum of winter foraging habitat, summer foraging habitat and other suitable habitat, which are all presumed to currently provide habitat.

d Total potential lynx habitat is the sum of suitable habitat and temporary non-suitable habitat acres. This category represents all lands potentially supporting lynx preferred climax vegetation types over time regardless of their current structural condition.

e Total acres is the sum of total potential lynx habitat and non-habitat.

f Percentages for these habitat classes describe habitat amounts proportional to total potential lynx habitat.

g Percentages for these classes describe amounts proportional to total acres.

Source: DNRC GIS 2010

TABLE 9-22. ACREAGES OF EXISTING CANADA LYNX HABITAT, USING HCP LYNX HABITAT DEFINITIONS, FOR ALL DNRC LANDS AND ON HCP PROJECT AREA LANDS WITHIN THE CLO, BY ADMINISTRATIVE UNIT

	CLO Lands in the Planning Area[a] (%)									CLO Lands in the HCP Project Area[b] (%)								
Habitat Class	**BOZ**		**CON**		**DIL**		**HEL**		**Total**	**BOZ**		**CON**		**DIL**		**HEL**		**Total**
Suitable Habitat Subtotal[c,f]	11,149	(71.6)	1,426	(93.5)	18,885	(78.2)	11,582	(68.9)	43,042	7,956	(74.9)	0	(0.0)	14,443	(76.1)	5,529	(74.4)	27,928
Temporary Non-Suitable Habitat[f]	4,423	(28.4)	99	(6.5)	5,276	(21.8)	5,238	(31.1)	15,036	2,667	(25.1)	0	(0.0)	4,546	(23.9)	1,898	(25.6)	9,111
Total Potential Lynx Habitat[d,g]	15,572	(12.4)	1,525	(0.4)	24,161	(5.6)	16,820	(4.8)	58,078	10,623	(64.4)	0	(0.0)	18,989	(26.9)	7,427	(28.4)	37,039
Non Habitat	110,350	(87.6)	355,299	(99.6)	406,066	(94.4)	332,737	(95.2)	1,204,452	5,860	(35.6)	0	(0.0)	51,604	(73.1)	18,679	(71.6)	76,143
Total Acres[e]	*125,922*	*(100.0)*	*356,824*	*(100.0)*	*430,227*	*(100.0)*	*349,557*	*(100.0)*	*1,262,530*	*16,483*	*(100.0)*	*0*	*(0.0)*	*70,593*	*(100.0)*	*26,106*	*(100.0)*	*113,182*

[a] Land offices in the Planning Area inlclude Northwest Land Office (NWLO), Southwest Land Office (SWLO), and Central Land Office (CLO). Administrative units in the Central Land Office include Bozeman(BOZ), Conrad (CON), Dillon (DIL), and Helena (HEL).

[b] HCP Project Area includes all DNRC HCP-covered lands within the Planning Area.

[c] The suitable habitat subtotal is the sum of winter foraging habitat, summer foraging habitat and other suitable habitat, which are all presumed to currently provide habitat.

[d] Total potential lynx habitat is the sum of suitable habitat and temporary non-suitable habitat acres. This category represents all lands potentially supporting lynx preferred climax vegetation types over time regardless of their current structural condition.

[e] Total cres is the sum of total potential lynx habitat and non-habitat.

[f] Percentages for these habitat classes describe habitat amounts proportional to total potential lynx habitat.

[g] Percentages for these classes describe amounts proportional to total acres.

Source: DNRC GIS 2010

TABLE 9-23. COMPOSITION OF CURRENT LYNX HABITAT, USING THE HCP LYNX HABITAT DEFINITION, ON DNRC LANDS WITHIN LYNX MANAGEMENT AREAS (LMAS) PROPOSED UNDER THE HCP

	Proposed LMAs (Land Office)[a]												
	Stillwater West (NWLO)		Stillwater East (NWLO)		Coal Creek (NWLO)		Swan (NWLO)		Seely Lake (SWLO)		Garnet (SWLO)		Total
Habitat Class	ac.	%	ac.	%	ac.	%	ac.	%	ac.	%	ac.	%	ac
Winter Foraging Habitat[b]	21,975	(61.8)	26,065	(75.6)	5,103	(36.0)	23,798	(64.9)	2,556	(57.2)	1,079	(27.5)	80,576
Summer Foraging Habitat[b]	6,556	(18.4)	2,398	(7.0)	1,954	(13.8)	2,588	(7.1)	278	(6.2)	210	(5.4)	13,984
Other Suitable Habitat[b]	3,268	(9.2)	663	(1.9)	1,832	(12.9)	3,632	(9.9)	1,206	(27.0)	2,100	(53.5)	12,701
Suitable Habitat Subtotal[b,c]	31,799	(89.4)	29,126	(84.5)	8,889	(62.7)	30,018	(81.9)	4,040	(90.5)	3,389	(86.4)	107,261
Temporary Non-Suitable Habitat[b]	3,783	(10.6)	5,342	(15.5)	5,299	(37.3)	6,636	(18.1)	426	(9.5)	534	(13.6)	22,020
Total Potential Lynx Habitat[d,f]	35,582	(91.8)	34,468	(93.9)	14,188	(93.1)	36,654	(92.3)	4,466	(44.9)	3,923	(52.2)	129,281
Non Habitat[f]	3,159	(8.2)	2,238	(6.1)	1,048	(6.9)	3,046	(7.7)	5,472	(55.1)	3,586	(47.8)	18,549
DNRC Total Acres[e]	***38,741***	***(100.0)***	***36,706***	***(100.0)***	***15,236***	***(100.0)***	***39,700***	***(100.0)***	***9,938***	***(100.0)***	***7,509***	***(100.0)***	***147,830***

a NWLO = Northwestern Land Office, SWLO = Southwestern Land Office, and CLO = Central Land Office. No LMAs are proposed within the CLO.

b Percentages for these habitat classes describe habitat amounts proportional to total potential lynx habitat.

c The Suitable Habitat Subtotal is the sum of Winter Foraging Habitat, Summer Foraging Habitat, and Other Suitable Habitat, which are all presumed to currently provide habitat.

d Total Potential Lynx Habitat is the sum of Suitable Habitat and Temporary Non-suitable Habitat acres. This category represents all lands potentially supporting lynx preferred climax vegetation types over time regardless of their current structural condition.

e DNRC Total Acres is the sum of Total Potential Lynx Habitat and Non Habitat.

f Percentages for these classes describe amounts proportional to DNRC Total Acres.

Source: DNRC GIS 2010

TABLE 9-24. COMPARISON OF ACREAGES OF LYNX HABITAT ON FEDERAL VS. DNRC LANDS IN THE PLANNING AREA

	Lynx Habitat on Federal Lands in Planning Area	Lynx Habitat on DNRC Lands in Planning Area	
		HCP Habitat Definition	RULES Habitat Definition
Suitable Lynx Habitat[a]	8,456,017	248,529	186,610
Temporary Non-Suitable Habitat[b]	—	50,415	32,117
Total Potential Lynx Habitat	8,456,017	298,944	218,727

a Suitable lynx habitat on federal lands includes suitable habitat as mapped by USFS. Estimates for suitable habitat on DNRC lands are derived using DNRC (2006) lynx habitat mapping protocol.
b Applies only to DNRC lands. Complete Temporary Non-suitable Habitat maps were not available for federal lands.
Source: DNRC GIS 2010

TABLE 9-25. LYNX HABITAT WITHIN FEDERALLY DEFINED (I.E., USFS AND BLM) LYNX ANALYSIS UNITS (LAUS) WITHIN THE PLANNING AREA

Subject Description	Amounts	
Number of LAUs Containing Federal Land and Some Amount of Federally Identified Lynx Habitat.	830	
Acreage of LAUs Containing Federal Land and Some Amount of Federally Identified Lynx Habitat.	19,388,255	
Acreage of Federally Identified Lynx Habitat within LAUs that contain Federal Land.	8,409,506	
Acreage of DNRC Land that Occurs within LAUs Containing Federal Lands and Federally Identified Lynx Habitat.	612,755	
Acreage (and Percent)[a] of DNRC Total Potential Lynx Habitat that Occurs within LAUs Containing Federal Lands and Federally Identified Lynx Habitat.	112,221	(1.3)

a The percentage refers to the DNRC lynx habitat percentage of federally defined lynx habitat plus DNRC total potential lynx habitat that falls within LAUs containing federal lands.

TABLE 9-26. ACREAGE OF POTENTIAL BALD EAGLE NESTING HABITAT ON DNRC LANDS WITHIN THE PLANNING AREA AND HCP PROJECT AREA

LAND OFFICES and Administrative Unit Offices	Potential Bald Eagle Nesting Habitat in the Planning Area[a,b]	Potential Bald Eagle Nesting Habitat on DNRC Lands within the Planning Area (Percent of Potential Habitat in Planning Area)[b,c]		Potential Bald Eagle Nesting Habitat in the HCP Project Area (Percent of Potential Habitat in the Planning Area)[b,c]	
NWLO	**1,473,927**	**82,521**	**(5.6)**	**62,029**	**(4.2)**
Kalispell Unit	239,013	16,994	(7.1)	7,921	(3.3)
Libby Unit	220,454	5,921	(2.7)	4,753	(2.2)
Plains Unit	215,319	11,809	(5.5)	9,527	(4.4)
Stillwater Unit	366,583	37,675	(10.3)	30,126	(8.2)
Swan Unit	432,558	10,122	(2.3)	9,702	(2.2)
SWLO	**1,059,184**	**49,611**	**(4.7)**	**37,625**	**(3.6)**
Anaconda Unit	372,576	9,629	(2.6)	8,957	(2.4)
Clearwater	215,747	20,844	(9.7)	16,141	(7.5)
Hamilton Unit	157,994	1,588	(1.0)	1,344	(0.9)
Missoula Unit	312,868	17,550	(5.6)	11,183	(3.6)
CLO	**1,270,852**	**28,894**	**(2.3)**	**7,831**	**(0.6)**
Bozeman Unit	244,467	2,890	(1.2)	781	(0.3)
Conrad Unit[d]	326,179	7,170	(2.2)	0	(0.0)
Dillon Unit	436,602	10,712	(2.5)	6,161	(1.4)
Helena Unit	263,603	8,122	(3.1)	889	(0.3)
Total	**3,803,963**	**161,026**	**(4.2)**	**107,485**	**(2.8)**

a Planning area includes all of NWLO, SWLO, and CLO.
c HCP project area includes all DNRC HCP-covered lands within the planning area.
d All lands on this unit occur outside of the HCP project area.
Source: DNRC GIS 2008

TABLE 9-27. DNRC PARCELS AND ACREAGE ASSOCIATED WITH ACTIVE (2005) BALD EAGLE NEST SITE MANAGEMENT ZONES WITHIN THE PLANNING AREA AND HCP PROJECT AREA

	Parcel Count (and Acreage) for DNRC Lands Associated with Bald Eagle Nesting Zones within the Planning Area[a,b]						Parcel Count (and Acreage) for DNRC Lands Associated with Bald Eagle Nesting Zones within the HCP Project Area[b,c]					
LAND OFFICES and Administrative Unit Offices	**Nest Site Area**		**Primary Use Area**		**Home Range Area**		**Nest Site Area**		**Primary Use Area**		**Home Range Area**	
NWLO	**19**	**(7,478)**	**28**	**(11,133)**	**226**	**(94,500)**	**13**	**(6,377)**	**18**	**(8,836)**	**164**	**(77,292)**
Kalispell Unit	4	(605)	6	(1,290)	52	(16,198)	1	(481)	1	(481)	27	(10,579)
Libby Unit	2	(868)	3	(1,134)	25	(9,839)	1	(553)	2	(819)	18	(7,386)
Plains Unit	1	(348)	3	(1,009)	31	(10,353)	1	(348)	2	(654)	22	(8,088)
Stillwater Unit	11	(5,034)	15	(7,076)	110	(53,075)	9	(4,372)	12	(6,258)	89	(46,204)
Swan Unit	1	(624)	1	(624)	8	(5,035)	1	(624)	1	(624)	8	(5,035)
SWLO	**12**	**(4,459)**	**19**	**(7,377)**	**177**	**(64,627)**	**9**	**(3,195)**	**13**	**(4,745)**	**123**	**(47,574)**
Anaconda Unit	1	(638)	1	(638)	35	(14,649)	1	(638)	1	(638)	18	(8,474)
Clearwater	3	(1,394)	7	(3,077)	59	(21,981)	3	(1,394)	5	(2,348)	45	(18,071)
Hamilton Unit	0	(0)	0	(0)	9	(2,695)	0	(0)	0	(0)	8	(2,690)
Missoula Unit	8	(2,427)	11	(3,663)	74	(25,302)	5	(1,164)	7	(1,760)	52	(18,339)
CLO	**11**	**(4,741)**	**32**	**(12,002)**	**277**	**(108,578)**	**0**	**(0)**	**3**	**(1,330)**	**18**	**(8,958)**
Bozeman Unit	4	(2,237)	9	(4,836)	58	(26,435)	0	(0)	0	(0)	0	(0)
Conrad Unit[d]	1	(39)	2	(79)	13	(3,640)	0	(0)	0	(0)	0	(0)
Dillon Unit	1	(361)	5	(2,407)	92	(41,627)	0	(0)	2	(924)	16	(8,350)
Helena Unit	5	(2,104)	16	(4,681)	114	(36,875)	0	(0)	1	(405)	2	(608)
Total	***42***	***(16,678)***	***79***	***(30,512)***	***680***	***(267,705)***	***22***	***(9,573)***	***34***	***(14,911)***	***305***	***(133,824)***

a Planning area includes all of NWLO, SWLO, and CLO.

b The "Nest Site Area," "Primary Use Area," and "Home Range Area" are terms and descriptions which follow those contained in the Montana Bald Eagle Management Plan (MBEWG 1994).

c HCP Project Area includes all DNRC HCP-covered lands within the Planning Area.

d All lands on this unit occur outside of the HCP Project Area.

Source: DNRC GIS 2008

TABLE 9-28. ACREAGES OF BALD EAGLE RECOVERY ZONES IN MONTANA AND CORRESPONDING ACTIVE TERRITORIES DETECTED IN 2005

Recovery Zone	Acres (Number 2005 Territories)[a]
Zone 7 Upper Columbia Basin (149)	16,107,004
Zone 18 Greater Yellowstone (11)	1,281,063
Zone 38 Missouri Headwaters (25)	7,637,008
Zone 39 Upper Missouri (38)	13,740,980
Zone 40 Bighorn (45)	9,117,657
Zone 41 Powder River (32)	15,724,734
Zone 47 Missouri Basin (17)	30,497,621
Total 317	**94,106,067**

[a] Active territory numbers from K. Dubois, FWP R-2, May 4, 2006 internal memo.

Source: DNRC GIS 2008

TABLE 9-29. ACREAGE ESTIMATES OF GRAY WOLF TERRITORY AREA FOR YEAR 2005 WITHIN THE PLANNING AREA AND HCP PROJECT AREA

Montana Wolf Packs by Recovery Area	Acreage of Wolf Pack Territory within the Planning Area[a,c]	Acreage of Wolf Pack Territory on DNRC Lands within Planning Area[a] (% of total in Planning Area)		Acreage of Wolf Pack Territory on DNRC Lands within the HCP Project Area (% of total in Planning Area)[a,b]	
Northwest Montana Recovery Area Subtotal	**904,820**	**38,279**	**(4.2)**	**33,015**	**(3.6)**
Big Hole	8,472	0	(0.0)	0	(0.0)
Candy Mountain	69,862	0	(0.0)	0	(0.0)
Fish Creek	137,549	7,216	(5.2)	6,115	(4.4)
Fish Trap	109,788	6,793	(6.2)	6,793	(6.2)
Great Bear	18,207	0	(0.0)	0	(0.0)
Halfway	147,111	8,156	(5.5)	6,557	(4.5)
Hog Heaven	85,091	5,014	(5.9)	4,303	(5.1)
Kintla	25,890	452	(1.7)	452	(1.7)
Kootenai South	74,138	5,389	(7.3)	4,025	(5.4)
Lazy Creek	12,059	0	(0.0)	0	(0.0)
Livermore	18,198	0	(0.0)	0	(0.0)
Marias	18,204	0	(0.0)	0	(0.0)
Murphy Lake	82,471	1,931	(2.3)	1,931	(2.3)
Ninemile	27,922	161	(0.6)	0	(0.0)
Red Shale	18,210	0	(0.0)	0	(0.0)
Spotted Bear	18,761	0	(0.0)	0	(0.0)
Spotted Dog	18,228	1,663	(9.1)	1,663	(9.1)
Superior	18,222	0	(0.0)	0	(0.0)
Whitefish	77,272	3,983	(5.2)	2,053	(2.7)
Wolf Prairie	28,721	1,932	(6.7)	1,932	(6.7)

Montana Wolf Packs by Recovery Area	Acreage of Wolf Pack Territory within the Planning Area[a,c]	Acreage of Wolf Pack Territory on DNRC Lands within Planning Area[a] (% of total in Planning Area)		Acreage of Wolf Pack Territory on DNRC Lands within the HCP Project Area (% of total in Planning Area)[a,b]	
Greater Yellowstone Experimental Population Area Subtotal	**433,766**	**8,772**	**(2.0)**	**4,829**	**(1.1)**
Beartrap	1,840	0	(0.0)	0	(0.0)
Buffalo Fork	18,250	0	(0.0)	0	(0.0)
Carbonate Mountain	16,601	0	(0.0)	0	(0.0)
Casey Lake	20,650	0	(0.0)	0	(0.0)
Chief Joe %	149,222	642	(0.4)	642	(0.4)
Deadhorse	66,450	0	(0.0)	0	(0.0)
Donohue	24,013	0	(0.0)	0	(0.0)
Freezeout	97,368	1,331	(1.4)	1,065	(1.1)
Mill Creek	3,055	0	(0.0)	0	(0.0)
Mission Creek	29,177	571	(2.0)	0	(0.0)
Moccasin Lake	0	0	(0.0)	0	(0.0)
Rosebud	0	0	(0.0)	0	(0.0)
Sage Creek	0	0	(0.0)	0	(0.0)
SW 28	1,704	0	(0.0)	0	(0.0)
SW 57	18,252	5,594	(30.6)	3,122	(17.1)
Wedge	25,200	634	(2.5)	0	(0.0)
Central Idaho Experimental Population Area Subtotal	**827,116**	**19,752**	**(2.4)**	**7,960**	**(1.0)**
Battlefield	357,958	13,880	(3.9)	3,151	(0.9)
Big Hole	40,743	0	(0.0)	0	(0.0)
Black Canyon	16,167	374	(2.3)	0	(0.0)
Brooks Creek	58,252	0	(0.0)	0	(0.0)
Fish Creek	804	0	(0.0)	0	(0.0)
Lake Como	18,236	172	(0.9)	172	(0.9)
Mt Haggin	18,237	0	(0.0)	0	(0.0)
Painted Rocks	18,240	91	(0.5)	91	(0.5)

Montana Wolf Packs by Recovery Area	Acreage of Wolf Pack Territory within the Planning Area[a,c]	Acreage of Wolf Pack Territory on DNRC Lands within Planning Area[a] (% of total in Planning Area)		Acreage of Wolf Pack Territory on DNRC Lands within the HCP Project Area (% of total in Planning Area)[a,b]	
Sapphire	152,992	686	(0.4)	641	(0.4)
Skalkaho	18,234	376	(2.1)	376	(2.1)
Sula	58,342	1,335	(2.3)	1,335	(2.3)
Willow Creek	69,115	2,836	(4.1)	2,193	(3.2)
Total	*2,165,702*	*66,802*	*(3.1)*	*45,804*	*(2.1)*

Source: DNRC GIS 2008 and Rocky Mountain Wolf Recovery 2005 Interagency Annual Report (USFWS et al. 2006)

[a] Planning Area includes all of NWLO, SWLO, and CLO.

[b] HCP Project Area includes all DNRC HCP-covered lands within the Planning Area.

[c] Values presented in this column will not add up to the corresponding subtotals due to overlap of pack territories, which was removed for the analysis.

TABLE 9-30. SUMMARY STATISTICS FOR THE COMPOSITE AREA OF ALL KNOWN WOLF PACK TERRITORIES FROM 1999 TO 2005 WITHIN THE PLANNING AREA

Total Acreage of Composite Wolf Pack Territories from 1999 to 2005 within the Planning Area[a]	Acreage of Composite Wolf Pack Territories from 1999 to 2005 on DNRC Lands within Planning Area (% of total in Planning Area)[a]		Acreage of Composite Wolf Pack Territories from 1999 to 2005 on DNRC Lands within the HCP Project Area (% of total in Planning Area)[a]	
6,993,362	261,564	(3.7)	202,529	(2.9)

Source: Source: Rocky Mountain Wolf Recovery 2005 Interagency Annual Report (USFWS et al. 2006)

a Areas of overlapping wolf packs were counted once in the tallying of acreages.

TABLE 9-31. DNRC OWNERSHIP BY 7-YEAR WOLF TERRITORY OVERLAP CLASS DEVELOPED FROM ALL KNOWN WOLF PACK TERRITORIES FROM 1999 TO 2005 WITHIN THE PLANNING AREA

	DNRC Acreage by Wolf Territory Overlap Class						
Land Office, Administrative Unit	**1 Year Wolf Activity**	**2 Years Wolf Activity**	**3 Years Wolf Activity**	**4 Years Wolf Activity**	**5 Years Wolf Activity**	**6 Years Wolf Activity**	**7 Years Wolf Activity**
NWLO	**77,848**	**41,332**	**27,871**	**16,957**	**4,247**	**2,724**	**1,043**
Kalispell Unit	11,198	5,223	3,764	1,239	197	0	0
Libby Unit	2,923	2,761	2,719	2,658	1,075	0	0
Plains Unit	21,325	2,144	4,274	1,299	240	0	0
Stillwater Unit	42,402	31,205	17,112	11,760	2,735	2,724	1,043
Swan Unit	0	0	0	0	0	0	0
SWLO	**31,456**	**9,177**	**5,000**	**3,489**	**674**	**8**	**0**
Anaconda Unit	14,103	5,068	1,998	769	0	0	0
Clearwater Unit	8,655	1,769	283	0	0	0	0
Hamilton Unit	3,219	172	0	0	0	0	0
Missoula Unit	5,480	2,166	2,719	2,720	674	8	0
CLO	**29,853**	**6,090**	**1,690**	**944**	**438**	**552**	**179**
Bozeman Unit	3,111	3,945	1,348	944	438	544	179
Conrad Unit	0	0	0	0	0	0	0
Dillon Unit	25,185	2,144	342	0	0	8	0
Helena Unit	1,558	0	0	0	0	0	0
Total	**139,157**	**56,598**	**34,560**	**21,389**	**5,360**	**3,284**	**1,222**

Source: DNRC GIS 2008 and Rocky Mountain Wolf Recovery 2005 Interagency Annual Report (USFWS et al. 2006).

TABLE 9-32. ACREAGE OF GRAZING LICENSES AND LEASES ON DNRC LANDS IN THE PLANNING AREA AND HCP PROJECT AREA, BY LAND OFFICE AND ADMINISTRATIVE UNIT FOR BLOCKED AND SCATTERED LANDS

Land Offices and Unit Offices (Scattered or Blocked Status)	Licenses[a]		Leases[a]	
	DNRC Lands Within the Planning Area[b]	HCP Lands within the Project Area[c]	DNRC Lands Within the Planning Area[b]	HCP Lands within the Project Area[c]
NWLO	**42,071**	**33,495**	**12,010**	**4,806**
Kalispell Unit (Scattered)	18,763	14,132	3,768	1,758
Libby Unit (Scattered)	6,978	6,487	0	0
Plains Unit (Scattered)	9,876	9,459	7,955	3,048
Stillwater Unit (Blocked)[d]	3,862	908	0	0
Stillwater Unit (Scattered)	2,591	2,509	286	0
Swan Unit (Blocked)	0	0	0	0
Swan Unit (Scattered)	0	0	0	0
SWLO	**91,484**	**78,222**	**77,668**	**33,625**
Anaconda Unit (Scattered)	11,952	11,952	63,885	28,190
Clearwater Unit (Scattered)	32,825	26,739	4,933	2,039
Hamilton Unit (Scattered)d	18,121	15,541	6,728	2,136
Missoula Unit (Scattered)	28,587	23,991	2,122	1,260
CLO	**21,110**	**16,813**	**1,106,557**	**83,935**
Bozeman Unit (Scattered)	4,790	4,157	104,113	10,140
Conrad Unit (Scattered)[e]	0	0	286,613	0
Dillon Unit (Scattered)	2,536	1,339	413,299	67,979
Helena Unit (Scattered)	13,784	11,318	302,532	5,816
Total	**154,665**	**128,530**	**1,196,235**	**122,366**

[a] Actual acres may be less than depicted. Acreage amounts were calculated based on parcel area. When licenses or leases where granted for a subset of the actual parcel acreage that license/lease acreage is an over estimate of the true license/lease acreage.

[b] Planning Area includes all of NWLO, SWLO, and CLO.

[c] HCP Project Area includes all DNRC HCP-covered lands within the Planning Area.

[d] Includes the Coal Creek State Forest and majority of the Stillwater State Forest.

[e] Lands on this Unit occur outside of the HCP Project Area.

Source: DNRC GIS 2008

TABLE 9-33. ACREAGE OF GRAZING LICENSES AND LEASES ON DNRC LANDS WITHIN GRIZZLY BEAR RECOVERY ZONES AND NON-RECOVERY OCCUPIED HABITAT IN THE PLANNING AREA AND HCP PROJECT AREA, BY LAND OFFICE AND ADMINISTRATIVE UNIT FOR BLOCKED AND SCATTERED LANDS

Land Offices and Unit Offices by Recovery Zone[b] (Scattered or Blocked Status)	Licenses on DNRC Lands in the Planning Area[a]		Licenses in the HCP Project Area[a]		Leases on DNRC Lands in the Planning Area[a]		Leases in the HCP Project Area[a]	
	Recovery Zone	Non-Recovery Occupied Habitat[c]	Recovery Zone	Non-Recovery Occupied Habitat[c]	Recovery Zone	Non-Recovery Occupied Habitat[c]	Recovery Zone	Non-Recovery Occupied Habitat[c]
NWLO	**4,928**	**9,395**	**4,198**	**7,879**	**0**	**613**	**0**	**273**
Kalispell Unit NCDE (Scattered)	2,454	632	2,137	584	0	117	0	117
Libby Unit CYE (Scattered)	0	3,346	0	3,346	0	0	0	0
Plains Unit CYE (Scattered)	1	651	1	651	0	0	0	0
Plains Unit NCDE (Scattered)[f]	N/A	786	N/A	786	N/A	210	N/A	156
Stillwater Unit NCDE (Blocked)[d]	2,139	N/A	2,061	N/A	0	N/A	0	N/A
Stillwater Unit NCDE (Scattered)	335	3,972	0	2,509	0	0	0	0
Swan Unit NCDE (Blocked)[f]	0	N/A	0	N/A	0	N/A	0	N/A
Swan Unit NCDE (Scattered)[f]	0	N/A	N/A	N/A	0	N/A	N/A	N/A
SWLO	**5,663**	**29,598**	**4,142**	**25,033**	**0**	**5,250**	**0**	**1,718**
Anaconda Unit NCDE (Scattered)[f]	N/A	4,070	N/A	4,070	N/A	638	N/A	0
Clearwater Unit NCDE (Scattered)	5,663	25,528	4,142	20,963	0	4,613	0	1,718
Hamilton Unit BE (Scattered)[e, f]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Missoula Unit BE (Scattered)[e, f]	0	N/A	0	N/A	0	N/A	0	N/A
Missoula Unit NCDE (Scattered)	0	0	0	0	0	0	0	0
CLO	**639**	**7,102**	**639**	**5,605**	**49,642**	**136,804**	**0**	**21,729**
Bozeman Unit GYE (Scattered)[f]	0	3,465	N/A	3,166	0	14,320	N/A	2,781
Conrad Unit NCDE (Scattered)[f]	0	0	N/A	N/A	30,539	45,293	N/A	N/A
Dillon Unit GYE (Scattered)[f]	N/A	1,838	N/A	640	N/A	57,559	N/A	18,868
Helena Unit NCDE (Scattered)	639	1,799	639	1,799	19,104	19,631	0	80
Total	**11,231**	**46,094**	**8,979**	**38,517**	**49,642**	**142,667**	**0**	**23,721**

a Actual acres may be less than depicted. Acreage amounts were calculated based on parcel area. When licenses or leases where granted for a subset of the actual parcel acreage that license/lease acreage is an over estimate of the true license/lease acreage. Planning Area includes all of NWLO, SWLO, and CLO. HCP Project Area includes all DNRC HCP-covered lands within the Planning Area.

b NCDE= Northern Continental Divide Ecosystem, CYE = Cabinet-Yaak Ecosystem, BE = Bitterroot Ecosystem, GYE = Greater Yellowstone Ecosystem.

c Non-recovery occupied habitat designation from Wittinger (2002).
d Includes the Coal Creek State Forest and majority of the Stillwater State Forest.
e The Bitterroot Recovery Zone (BE) is currently not considered occupied by grizzly bears.
f N/A = not applicable. Where N/A is listed in the table, there is no such land area in the given unit.
Source: DNRC GIS 2008

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